

作成承認印

配布許可印



Nikon Nuvis S

FFA09201 (MADE IN INDONESIA)

FFA09211 (NIKON JAPAN)

FFA09221 (NIKON JAPAN + MADE IN INDONESIA)

FFA09231 (MADE IN THAILAND)

FFA09241 (NIKON JAPAN)

FFA09251 (NIKON JAPAN + MADE IN THAILAND)

PARTS LIST (REVISED-1)

修理部品表 (改訂-1)

Nikon | **NIKON CORPORATION**
Tokyo, Japan

Feb 15 1999

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B

1

2

3

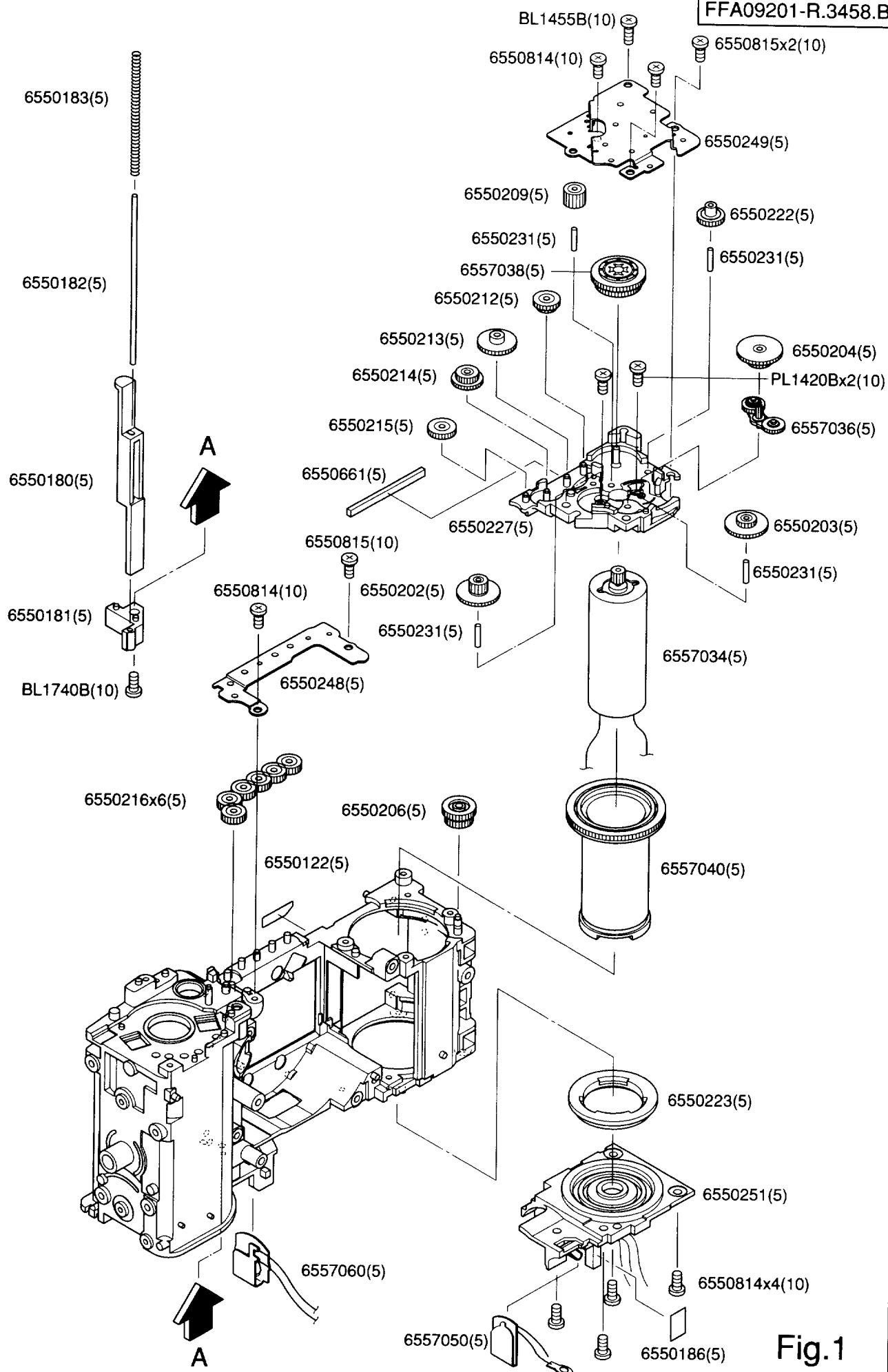


Fig.1

A

B

FFA09201-R.3458.B

1

2

3

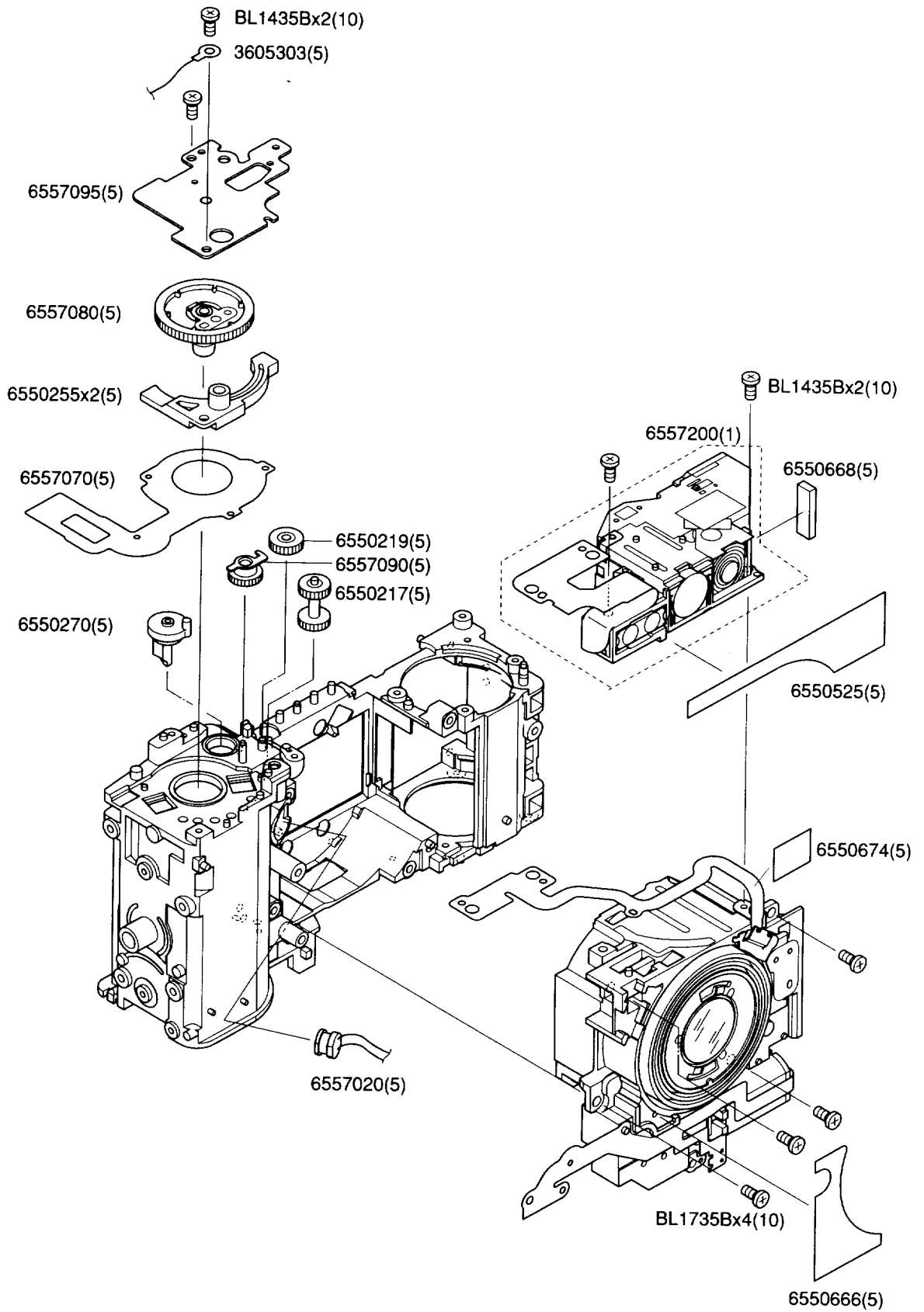


Fig.2

A

B

FFA09201-R.3458.B

1

2

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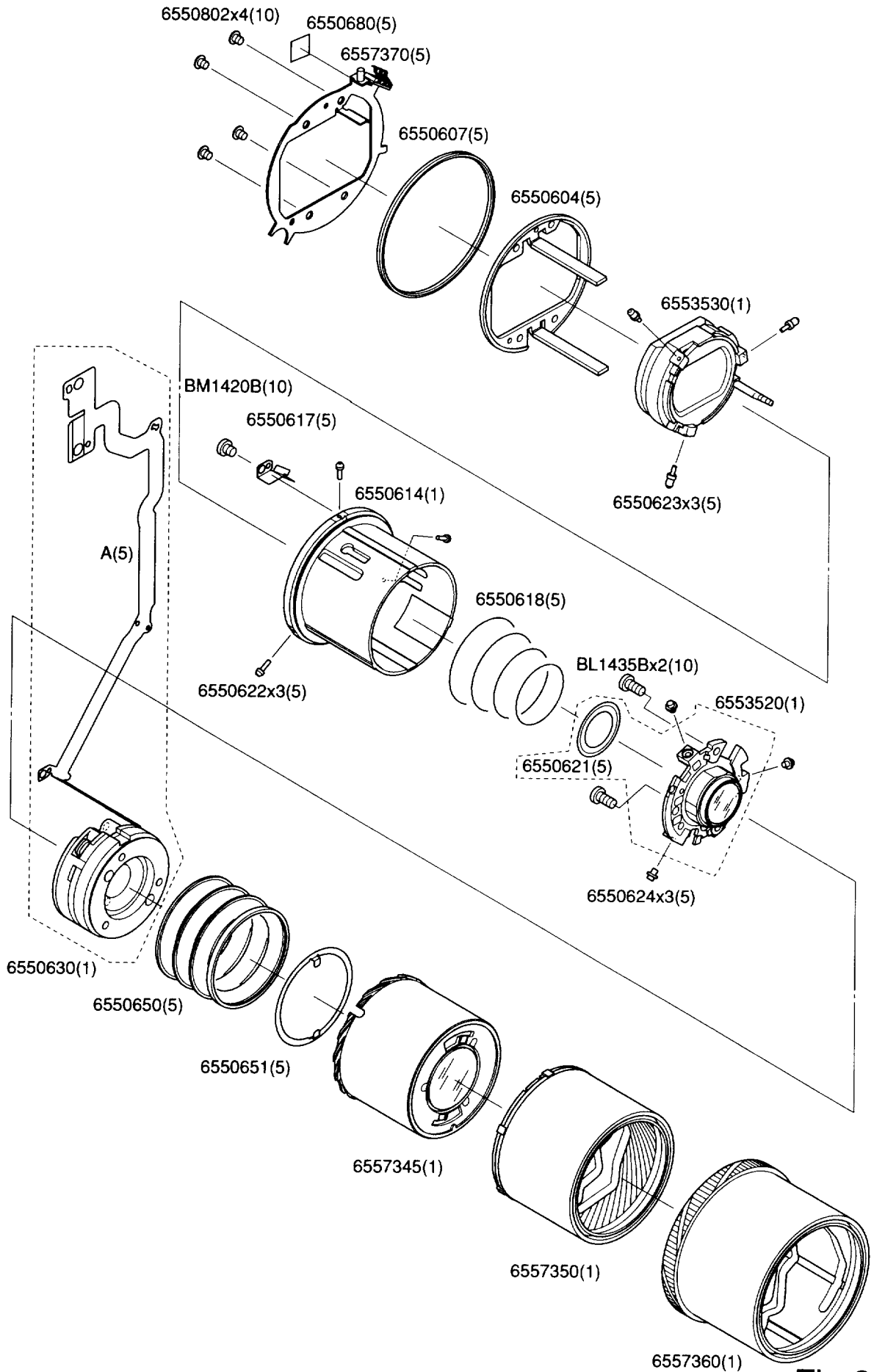


Fig.3

A

B

FFA09201-R.3458.B

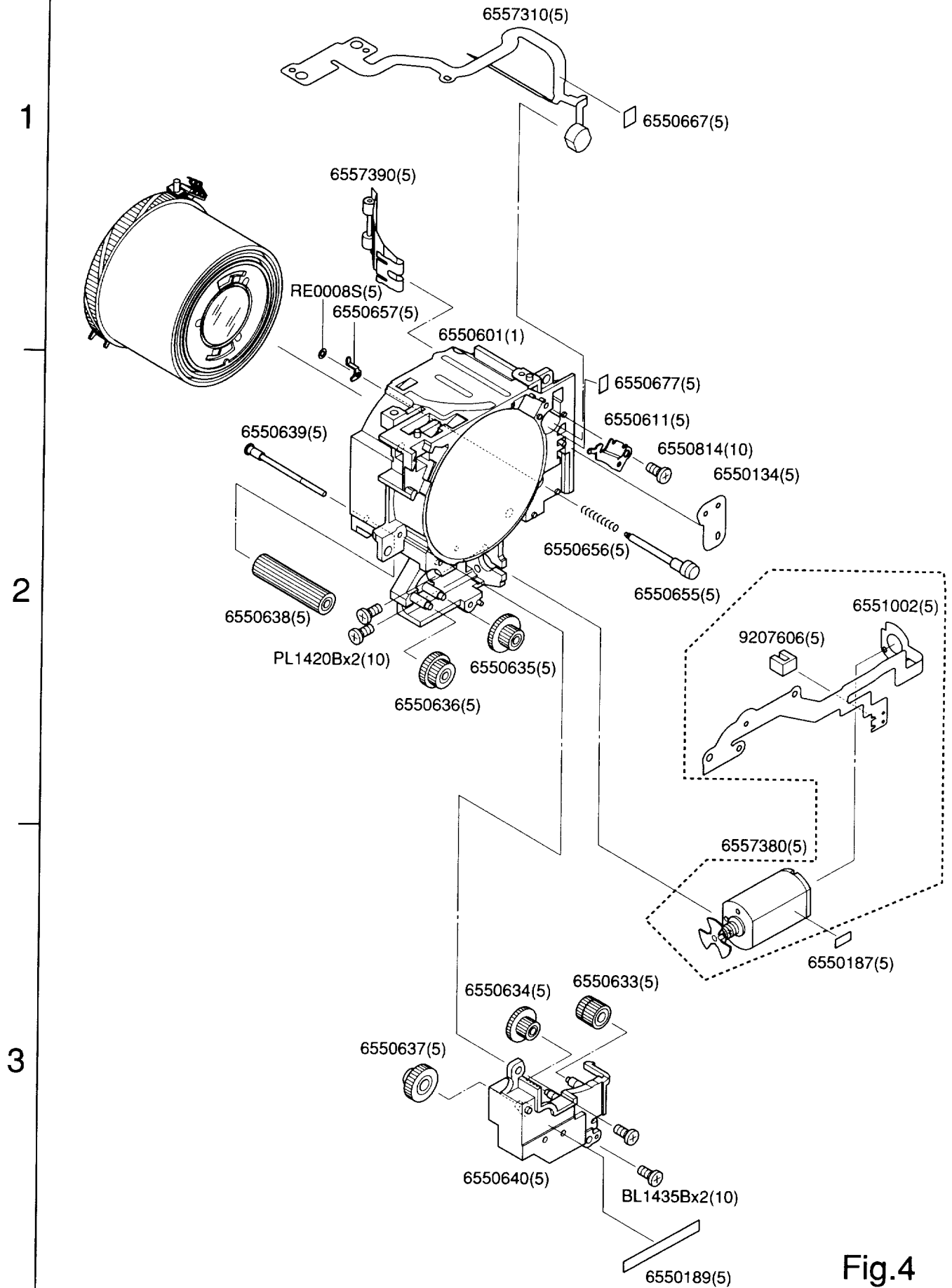


Fig.4

A

B

FFA09201-R.3458.B

1

2

3

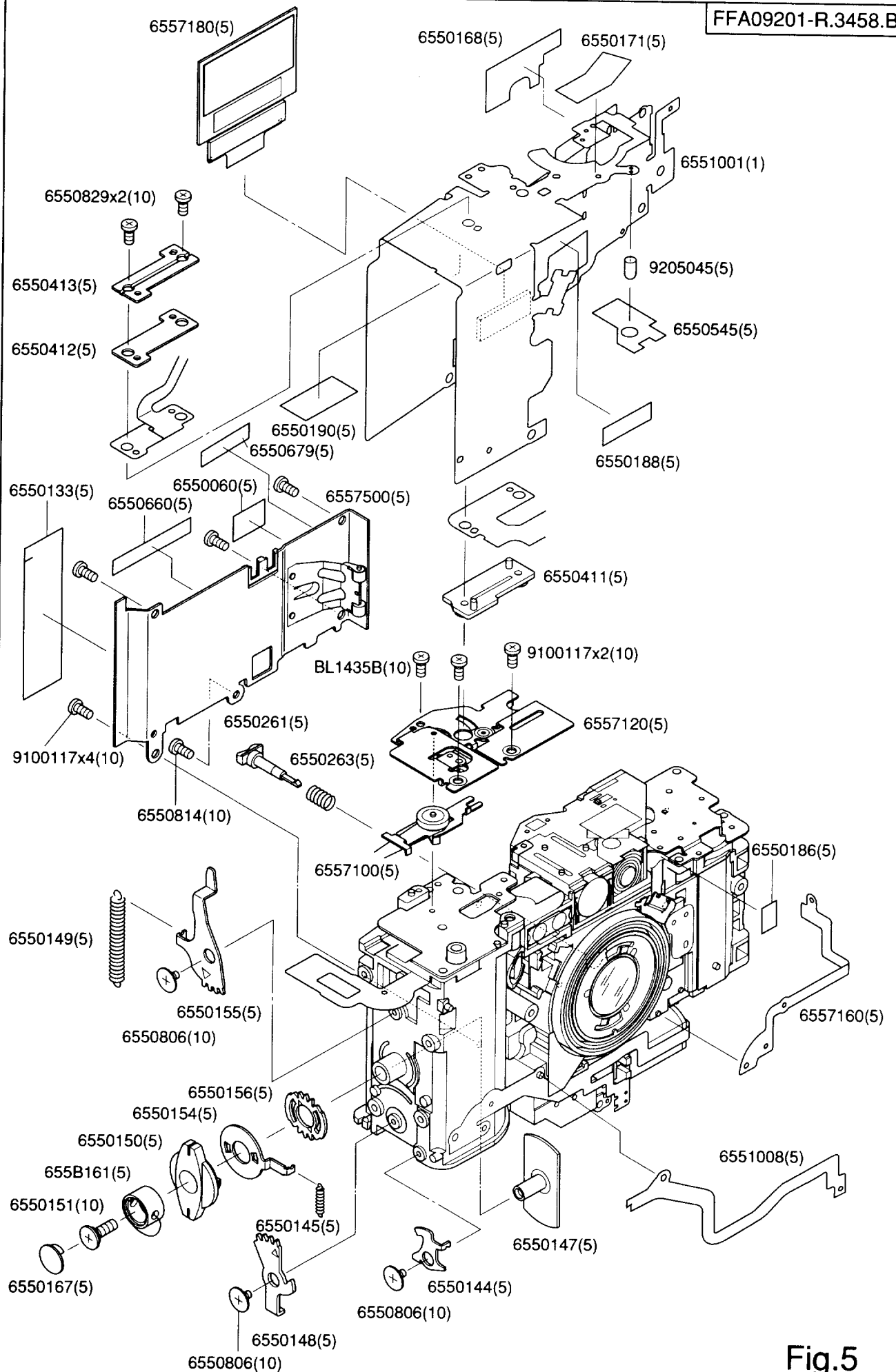


Fig.5

A

B

FFA09201-R.3458.B

1

2

3

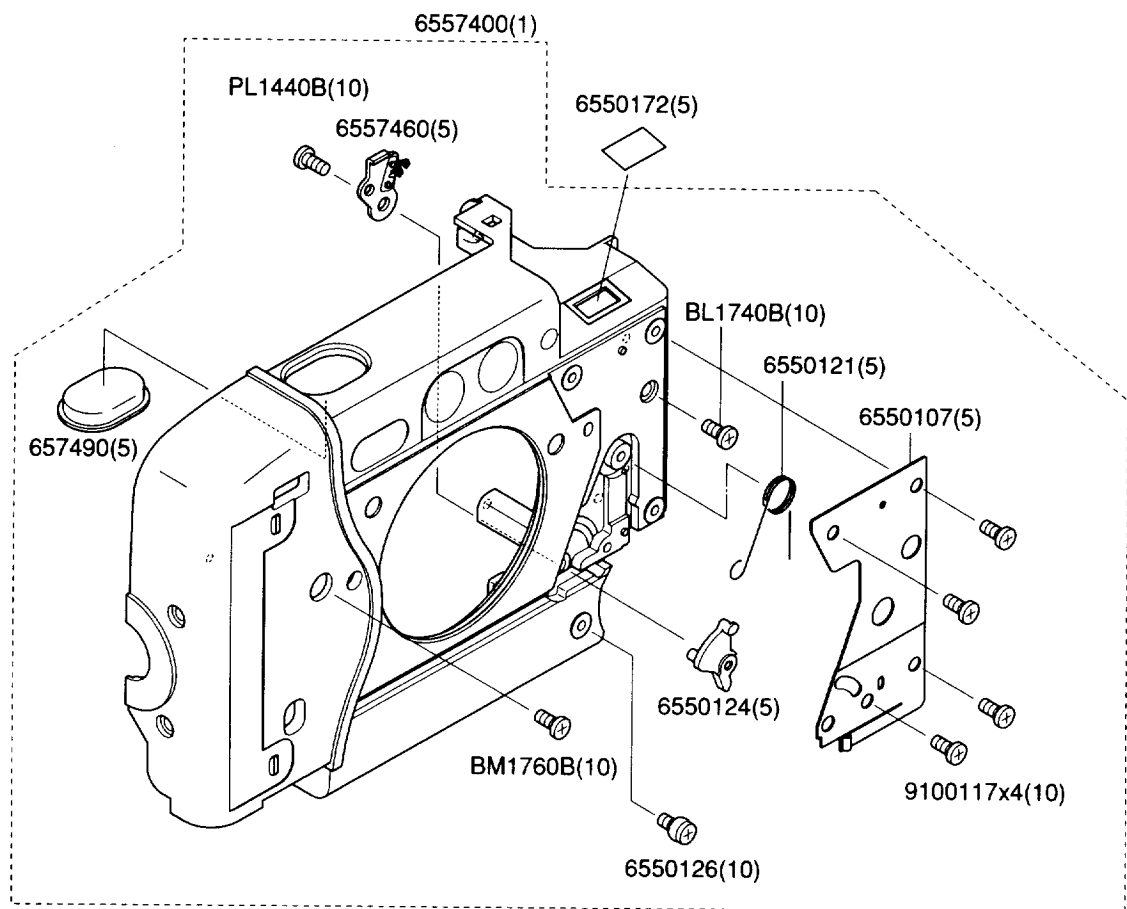


Fig.6

A

B

FFA09201-R.3458.B

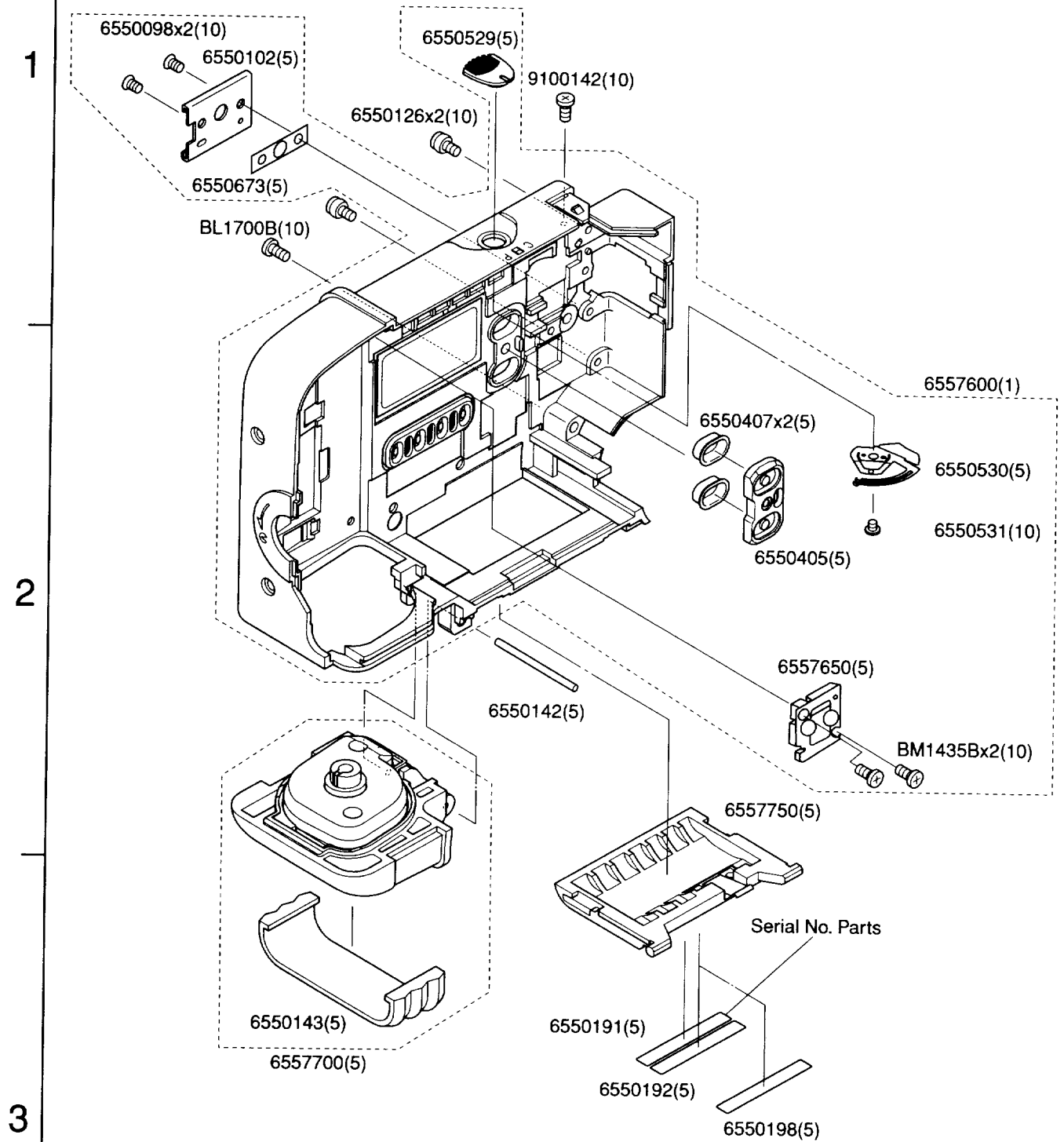


Fig.7

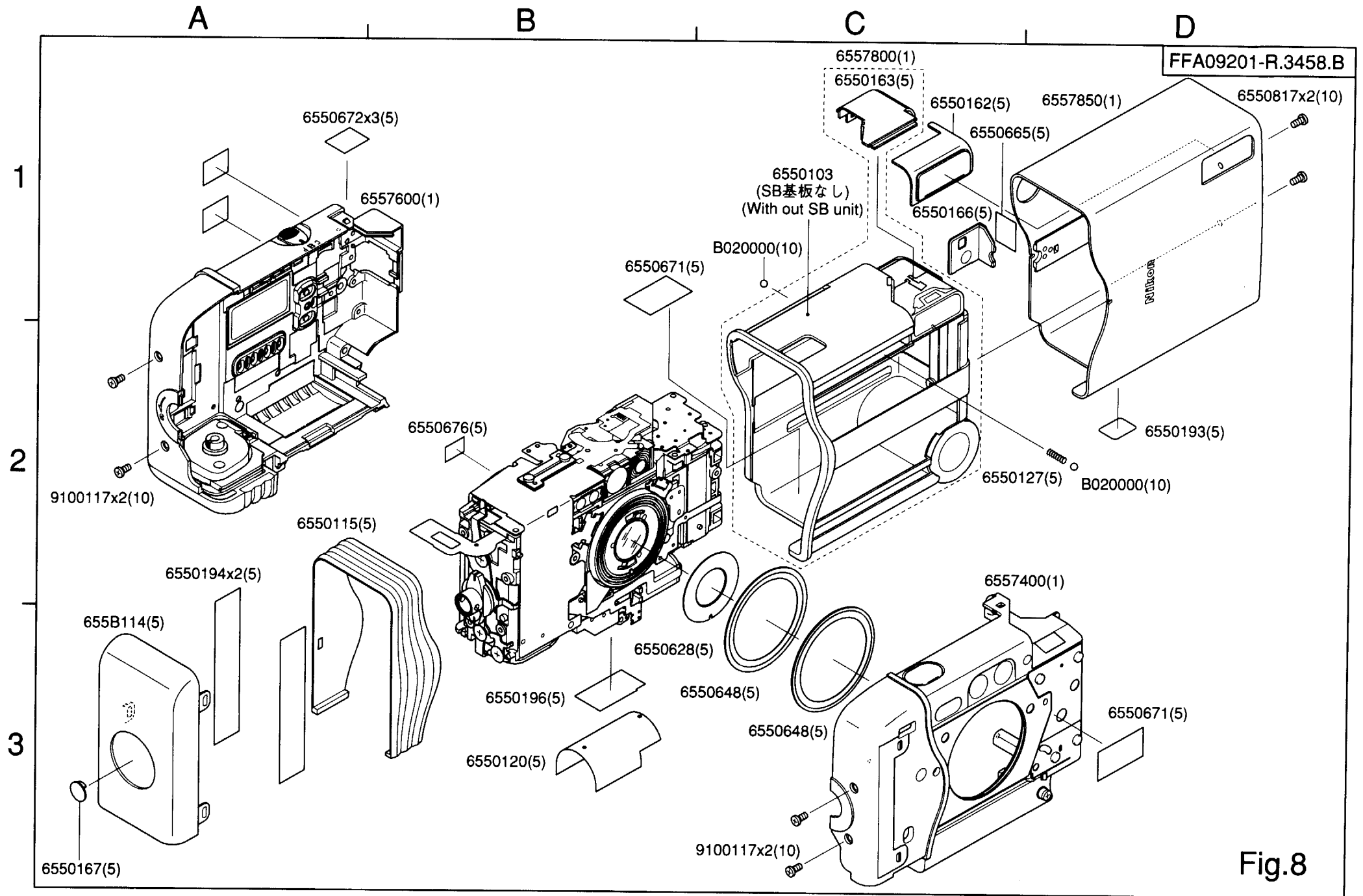


Fig.8

部品表 Parts List

FFA09201-R. 3458. B

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
3605303 (1S730-015)	691	S B端子 SB TERMINAL	1		2	○		5
6550060 (1S726-086)	60	絶縁テープ INSULATE TAPE	1		5	○		5
6550098 (1K010-395)	98	S C R E W SCREW	2		7	○		10
6550102 (1K612-322)	102	摺動台 SLIDER PLATE	1	1B998-708	7	○△		5
6550103 (1K682-215)	103	裏打ちカバー LINING COVER	1	1B998-709	8	○△		5
6550107 (1K612-325)	107	ガイド受け板 GUIDE HOLDER PLATE	1	1B998-700	6	○△		5
6550115 (1K682-218)	115	グリップゴム GRIP RUBBER	1		8	○		5
6550120 (1K083-277)	120	電池室シール BATTERY CHAMBER SEAL	1		8	○		5
6550121 (1K230-512)	121	バネ SPRING	1	1B998-700	6	○△		5
6550122 (1K118-755)	122	テープ TAPE	1		1	○		5
6550124 (1K682-220)	124	スライドカバーストッパー SLIDE COVER STOPPER	1	1B998-700	6	○△		5
6550126 (1K010-396)	126	S C R E W SCREW	3	1B998-700	6 7	○△		10
6550127 (1K220-479)	127	バネ SPRING	1		8	○		5
6550133 (1K118-756)	133	遮光テープ LIGHT SHIELD TAPE	1		5	○		1
6550134 (1K118-757)	134	A E 絞り AE APERTURE	1		4	○		5
6550142 (1K360-080)	142	ヒンジ軸 HINGE SHAFT	1		7	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550143 (1K682-223)	143	カートリッジ蓋ゴム CARTRIDGE LID RUBBER	1	1B998-706	7	○△		5
6550144 (1K612-329)	144	カートリッジ蓋ロック解除板 CART. COVER LOCK RELEASE LEVER	1		5	○		5
6550145 (1K225-295)	145	バネ SPRING	1		5	○		5
6550147 (1K146-184)	147	吊環軸 EYELET SHAFT	1		5	○		5
6550148 (1K612-330)	148	カートリッジ蓋ロック板 CARTRIDGE LID LOCK PLATE	1		5	○		5
6550149 (1K225-296)	149	バネ SPRING	1		5	○		5
6550150 (1K201-133)	150	カートリッジ蓋開閉ノブ CARTRIDGE OPENER KNOB	1		5	○		5
6550151 (1K130-636)	151	SCREW SCREW	1		5	○		10
6550154 (1K612-332)	154	バネ掛け板 SPRING HOOKING PLATE	1		5	○		5
6550155 (1K612-333)	155	連結板 COUPLING PLATE	1		5	○		5
6550156 (1K260-883)	156	ノブギア KNOB GEAR	1		5	○		5
6550162 (1K682-557)	162	S B窓 SB WINDOW	1		8	○		5
6550163 (1K682-228)	163	S Bカバー SB COVER	1	1B998-709	8	○△		5
6550166 (1K682-229)	166	S B FPCカバー SB FPC COVER	1		8	○		5
6550167 (1K682-230)	167	吊環カバー EYELET COVER	1		5 8	○		5
6550168 (1K118-759)	168	遮光テープ LIGHT SHIELD TAPE	1		5	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550171 (1K118-983)	171	テープ TAPE	1		5	○		5
6550172 (1K118-762)	172	遮光シート LIGHT SHIELD SHEET	1	1B998-700	6	○△		5
6550180 (1K682-231)	180	イジェクトレバー EJECT LEVER	1		1	○		5
6550181 (1K682-232)	181	イジェクトストッパー EJECT STOPPER	1		1	○		5
6550182 (1K360-081)	182	イジェクト軸 EJECT SHAFT	1		1	○		5
6550183 (1K220-481)	183	バネ SPRING	1		1	○		5
6550186 (1K118-767)	186	両面テープ DOUBLESIDED ADHESIVE TAPE	2		1 5	○		5
6550187 (1K118-768)	187	両面テープ DOUBLESIDED ADHESIVE TAPE	1		4	○		5
6550188 (1K118-769)	188	テープ TAPE	1		5	○		5
6550189 (1K118-770)	189	両面テープ DOUBLESIDED ADHESIVE TAPE	1		4	○		5
6550190 (1K118-771)	190	両面テープ DOUBLESIDED ADHESIVE TAPE	1		5	○		5
6550191 (1K082-029)	191	NO. シール NO. SEAL	1		7	○		5
6550192 (1K087-456)	192	原産地シール COUNTRY OF ORIGIN SEAL	1		7	○		5
6550193 (1K118-772)	193	CEシール CE SEAL	1		8	○		5
6550194 (1K118-773)	194	両面テープ DOUBLESIDED ADHESIVE TAPE	2		8	○		5
6550196 (1K118-984)	196	ノイズ防止板 NOISE PREVENT PLATE	1		8	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550198 (1K080-055)	198	原産地シール (N. J) COUNTRY OF ORIGIN SEAL (N. J)	1		7	○		5
6550202 (1K277-268)	202	ギア 2 GEAR 2	1		1	○		5
6550203 (1K277-269)	203	ギア 3 GEAR 3	1		1	○		5
6550204 (1K277-270)	204	ギア 4 GEAR 4	1		1	○		5
6550206 (1K277-271)	206	ギア 6 GEAR 6	1		1	○		5
6550209 (1K260-888)	209	ギア 9 GEAR 9	1		1	○		5
6550212 (1K277-272)	212	ギア 1 2 GEAR 12	1		1	○		5
6550213 (1K260-891)	213	ギア 1 3 GEAR 13	1		1	○		5
6550214 (1K277-273)	214	ギア 1 4 GEAR 14	1		1	○		5
6550215 (1K260-892)	215	ギア 1 5 GEAR 15	1		1	○		5
6550216 (1K260-893)	216	ギア 1 6 GEAR 16	6		1	○		5
6550217 (1K277-274)	217	ギア 1 7 GEAR 17	1		2	○		5
6550219 (1K260-894)	219	ギア 1 9 GEAR 19	1		2	○		5
6550222 (1K260-897)	222	ギア 2 2 GEAR 22	1		1	○		5
6550223 (1K641-496)	223	スプール基板 SPOOL BASE	1		1	○		5
6550227 (1K682-233)	227	給送基板 WINDING GEAR PLATE	1		1	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550231 (1K360-082)	231	給送ギア軸A FILM ADVANCE GEAR SHAFT A	4		1	○		5
6550248 (1K612-335)	248	給送ギア押さえ板A FILM ADVANCE RETAINER A	1		1	○		5
6550249 (1K612-336)	249	給送ギア押さえ板B FILM ADVANCE RETAINER B	1		1	○		5
6550251 (1K682-234)	251	モーター押さえ MOTOR RETAINER	1		1	○		5
6550255 (1K682-235)	255	F P C押さえ板 FPC RETAINER PLATE	1		2	○		5
6550261 (1K372-122)	261	パッド PAD	1		5	○		5
6550263 (1K220-484)	263	バネ SPRING	1		5	○		5
6550270 (1K682-236)	270	L L ドライバー LL DRIVER	1		2	○		5
6550405 (1S758-080)	405	S B モード S W SB MODE SW	1	1B998-708	7	○△		5
6550407 (1K208-222)	407	S B モード 釦 SB MODE BUTTON	2	1B998-708	7	○△		5
6550411 (1K682-237)	411	圧接ブロック PRESS CONTACT BLOCK	1		5	○		5
6550412 (1K118-779)	412	圧接ゴム PRESS CONTACT RUBBER	1		5	○		5
6550413 (1K612-339)	413	圧接板 PRESS CONTACT PLATE	1		5	○		5
6550525 (1K118-785)	525	遮光テープ LIGHT SHIELD TAPE	1		2	○		5
6550529 (1K206-156)	529	C H P ノブ CHP KNOB	1	1B998-708	7	○△		5
6550530 (1K241-225)	530	C H P ブラシ CHP BRUSH	1	1B998-708	7	○△		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550531 (1K010-398)	531	SCREW SCREW	1	1B998-708	7	○△		10
6550545 (1K118-786)	545	遮光シート LIGHT SHIELD SHEET	1		5	○		5
6550601 (1K535-484)	601	暗箱 FIXED LENS BARREL	1		4	○		1
6550604 (1K437-239)	604	直進キー LINEAR KEY	1		3	○		5
6550607 (1K521-317)	607	ナット NUT	1		3	○		5
6550611 (1K612-347)	611	FPC窓カバー FPC WINDOW COVER	1		4	○		5
6550614 (1K540-189)	614	2群移動環 2ND GROUP MOVEMENT RING	1		3	○		5
6550617 (1K612-348)	617	FPC押さえ板 FPC RETAINER PLATE	1		3	○		5
6550618 (1K220-486)	618	バネ SPRING	1		3	○		5
6550621 (1K576-121)	621	G4絞り G4 APERTURE	1	1B998-719	3	○△		5
6550622 (1K372-124)	622	フォロアピンA PIN A	3		3	○		5
6550623 (1K372-125)	623	フォロアピンB PIN B	3		3	○		5
6550624 (1K372-126)	624	2群ピン 2ND GROUP PIN	3		3	○		5
6550628 (1K601-559)	628	前飾り FRONT DECORATION	1		8	○		5
6550633 (1K277-275)	633	Kギア2 K GEAR 2	1		4	○		5
6550634 (1K277-276)	634	Kギア3 K GEAR 3	1		4	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550635 (1K277-277)	635	Kギア 4 K GEAR 4	1		4	○		5
6550636 (1K277-278)	636	Kギア 5 K GEAR 5	1		4	○		5
6550637 (1K260-900)	637	アイドルギア IDLE GEAR	1		4	○		5
6550638 (1K260-901)	638	Kギア 6 K GEAR 6	1		4	○		5
6550639 (1K372-128)	639	Kギア 6 軸 K GEAR 6 SHAFT	1		4	○		5
6550640 (1K682-240)	640	ギア基板カバー GEAR BASE PLATE COVER	1		4	○		5
6550648 (1K118-789)	648	カーテン 1 CURTAIN 1	2		8	○		5
6550650 (1K118-791)	650	蛇腹ゴム BELLOWS RUBBER	1		3	○		5
6550651 (1K612-349)	651	止めリング STOPPER RING	1		3	○		5
6550655 (1K366-109)	655	ロック棒 LOCK BAR	1		4	○		5
6550656 (1K220-487)	656	バネ SPRING	1		4	○		5
6550657 (1K612-350)	657	ロック軸当て板 LOCK SHAFT PLATE	1		4	○		5
6550660 (1K119-021)	660	シート SHEET	1		5	○		5
6550661 (1K119-022)	661	モルト SPONGE	1		1	○		5
6550665 (1K119-026)	665	テープ TAPE	1		8	○		5
6550666 (1K119-027)	666	シート SHEET	1		2	○		5

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6550667 (1K119-028)	667	両面テープ DOUBLESIDED ADHESIVE TAPE	1		4	○		5
6550668 (1K119-029)	668	モルト SPONGE	1		2	○		5
6550671 (1K119-033)	671	固定シート (前) FIXED SHEET (F)	2		8	○		5
6550672 (1K119-034)	672	固定シート (後) FIXED SHEET (R)	3		8	○		5
6550673 (1K119-049)	673	シート SHEET	1	1B998-708	7	○△		5
6550674 (1K119-050)	674	遮光シート LIGHT SHIELD SHEET	1		2	○		5
6550676 (1K119-052)	676	遮光シート LIGHT SHIELD SHEET	1		8	○		5
6550677 (1K119-053)	677	遮光シート LIGHT SHIELD SHEET	1		4	○		5
6550679 (1K119-055)	679	遮光シート LIGHT SHIELD SHEET	1		5	○		5
6550680 (1K119-056)	680	遮光シート LIGHT SHIELD SHEET	1		3	○		5
6550802 (1K003-026)	802	SCREW SCREW	4		3	○		10
6550806 (1K010-400)	806	SCREW SCREW	2		5	○		10
6550814 (1K010-401)	814	SCREW SCREW	8		1 4 5	○		10
6550815 (1K010-402)	815	SCREW SCREW	3		1	○		10
6550817 (1K010-440)	817	SCREW SCREW	2		8	○		10
6550829 (1K010-405)	829	SCREW SCREW	2		5	○		10

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	部組品番号 Assembly No.	参照 図番 Fig. No.	販売区分 Term of Delivery	備 考 Remarks	要求単位 Q'ty per order
6551002 (1S705-477)	1002	鏡筒モーターFPC LENS BARREL MOTOR FPC	1	1B998-724	4	○△		5
6551008 (1S705-482)	1008	MRC FPC MRC FPC	1		5	○		5
9100117 (1K010-417)	820	SCREW SCREW	14		5 6 8	○		10
9100142 (1K010-148)	813	SCREW SCREW	1		7	○		10
9205045 (1S459-002)	1027	赤目ランプ RED-EYE REDUCTION LAMP	1		5	○		5
9207606 (1S258-029)	1024	フォトインタラプタ PHOTO INTERRUPTER	1	1B998-724	4	○△		5
A (FFA09201-A)	A	シャッターFPC SHUTTER FPC	1	1B060-690	3	○△		5
B020000 (T1-02005FX1)	117	クリックボール CLICK BALL	2		8	○		5
BL1435B (1K010-408)	812	SCREW SCREW	7		2 3 4 5	○		10
BL1455B (1K010-403)	816	SCREW SCREW	1		1	○		10
BL1700B (1K010-410)	825	SCREW SCREW	1		7	○		5
BL1735B (1K010-411)	822	SCREW SCREW	6		2 7	○		10
BL1740B (1K010-412)	823	SCREW SCREW	2		1 6	○		10
BM1420B (1K010-407)	808	SCREW SCREW	1		3	○		10
BM1760B (1K010-415)	826	SCREW SCREW	1		6	○		10
PL1420B (1K120-447)	803	SCREW SCREW	4		1 4	○		10

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部組品表 Assembly List

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部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	大部組品番号 Main Assembly No.	参照 図番 Fig. No.	備 考 Remarks	要求単位 Q'ty per order
6550630 (1B060-690)	630	シャッター部組 SHUTTER UNIT	1		3		5
6551001 (1B998-698)	B200 1	メインFPC部組 MAIN FPC UNIT	1		5		1
6553520 (1B998-719)	B610	2群レンズ室部組 2ND LENS HOUSING UNIT	1		3		1
6553530 (1B998-720)	B613	3群レンズ室部組 3RD LENS HOUSING UNIT	1		3		1
6557020 (1B998-691)	B102 3	インダクター部組 INDACTER UNIT	1		2		5
6557034 (1B998-684)	B228	給送モーター部組 FILM ADVANCE MOTOR UNIT	1		1		5
6557036 (1B998-685)	B242	遊星アーム部組 PLANETARY ARM UNIT	1		1		5
6557038 (1B998-686)	B210	ワンウェイクラッチ部組 ONE WAY CLATCH UNIT	1		1		5
6557040 (1B998-681)	B207	スプール部組 SPOOL UNIT	1		1		5
6557050 (1B998-687)	B136	電池接点 (-) 部組 BATTERY CONTACT (-) UNIT	1		1		5
6557060 (1B998-680)	B135	電池接点 (+) 部組 BATTERY CONTACT (+) UNIT	1		1		5
6557070 (1S020-260)	B100 3	D/Dセンサー部組 D/D SENSOR UNIT	1		2		5
6557080 (1B998-689)	B221	Aエンド部組 A END UNIT	1		2		5
6557090 (1B998-690)	B245	セフティーロック部組 SAFTY LOCK UNIT	1		2		5
6557095 (1B600-082)	B250	LL押さえ板部組 LL RETAINER PLATE UNIT	1		2		5
6557100 (1B314-205)	B271	LLドライバー部組 LL DRIVER UNIT	1		5		5

部組品表 Assembly List

FFA09201-R. 3458. B

部品番号 Part No.	補助番号 Ckt No.	名 称 Name	1台分 個 数 Pcs. Per Unit	大部組品番号 Main Assembly No.	参照 図番 Fig. No.	備 考 Remarks	要求単位 Q'ty per order
6557120 (1B998-697)	B410	リリースSW基板部組 RELEASE SW BASE PLATE UNIT	1		5		5
6557160 (1S020-263)	B100 7	メインSW FPC部組 MAIN SW FPC UNIT	1		5		5
6557180 (1B998-703)	B230 3	LCDモジュール部組 LCD MODULE UNIT	1		5		5
6557200 (1B998-692)	B501	ファインダー部組 FINDER UNIT	1		2		1
6557310 (1S020-262)	B100 5	鏡筒エンコーダーFPC部組 LENS BARREL ENCODER FPC UNIT	1		4		5
6557345 (1B998-716)	B608	1群レンズ室部組 1ST LENS HOUSING UNIT	1		3		1
6557350 (1B998-715)	B606	カム環部組 (小) CAM RING UNIT (S)	1		3		1
6557360 (1B998-714)	B602	カム環部組 (大) CAM RING UNIT (G)	1		3		1
6557370 (1B998-722)	B605	直進キー基板部組 LINEAR KEY BASE PLATE UNIT	1		3		5
6557380 (1B998-724)	B629	鏡筒モーター部組 LENS TUBU MOTOR UNIT	1		4		5
6557390 (1B998-726)	B179	フィルム押さえバネ部組 FILM RETAINER SPRING UNIT	1		4		5
6557400 (1B998-700)	B108	前カバー部組 FRONT COVER UNIT	1		6 8		1
6557460 (1B998-701)	B130	メインSWロック基板部組 MAIN SW LOCK BASE PLATE UNIT	1		6		5
6557490 (1B998-702)	B404	リリースSW釦部組 LEREASE SW BUTTON UNIT	1		6		5
6557500 (1B998-704)	B213 2	圧板部組 PRESSURE PLATE UNIT	1		5		5
6557600 (1B998-708)	B109	後カバー部組 REAR COVER UNIT	1		7		1

FFA09201-R. 3458. B

- P 1 3 -

作成承認印

配布許可印



Nikon Nuvis S

FFA09201 (MADE IN INDONESIA)

FFA09211 (NIKON JAPAN)

FFA09221 (NIKON JAPAN + MADE IN INDONESIA)

FFA09231 (MADE IN THAILAND)

FFA09241 (NIKON JAPAN)

FFA09251 (NIKON JAPAN + MADE IN THAILAND)

REPAIR MANUAL

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Tokyo, Japan

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SPECIFICATIONS

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1. Main features

Lens focal length	F 22.5 to 66 mm / F5.2 to 7.5
Lens mechanism	Triple lens groups zooming system, 6 elements in 6 groups
Object distance from lens	0.45 m to infinity
AF system	Wide-area passive metering system
Base length	5.566 mm
The numbers of AF step	W : 66 edges T : 432 edges
Interlocking AE range	W : Ev 5 to 17 T : Ev 5 to 18.125 In accordance with ISO 100
FM system	Electronically light emission FM system interlocking the result(s) from metering
Interlocking FM range	W : F 5.6 to F 22 T : F 8.5 to F 34.3
Flash guide No.	11.3 in accordance with ISO 200
Charging period for speed light	Approximately 8 sec.
Viewfinder style	Zoom finder for the real images
Display for remote control	Operation display for the red-eye reduction lamp from the camera for 2 sec. Operation mode displayed on LCD

2. Time period for wind / rewind operations

Operation	Period of time
Automatic film loading	Almost after 0.4 sec. from closing the cartridge cover, the film loading operation automatically starts.
Malfunction during the automatic film loading	Detection timer : 12 sec.
Film advance	0.35 to 2.0 sec per frame as its standard
Automatic film rewinding	In case the PI signal is not input even after 2 sec. From the start of film rewind, or if completing the magnetic record(s) after shooting the final frame, the rewind operation mode automatically starts.
Automatic stop in film rewinding	If the PI signal can not be input even after 8 sec. or more from the beginning of film rewind, stop the rewind mode.
Manual film rewinding	As soon as detecting the 'MUS on', the manual film rewinding mode immediately starts.
Lens barrel timer	After 2 min. from turning on the main switch, the lens barrel automatically shifts to the Wide-end position.

3. Displayed cautions

Item	Details
Film unloaded	After 'E' blinks for 20 sec. in 2 Hz, its display keeps to be turned on. Loading an used cartridge
After rewinding a film	
Malfunction / any failure on lens barrel	If no entry of driving edge from the lens barrel within 1 sec. from the lens barrel drive, whole LCD starts to blink.
Exhaustion of battery energy	Its warning mark blinks.
Shooting from very close position	In case of getting nearer than 45 cm, the green LED on viewfinder starts to blink in 2 Hz.
Display for impossibility of metering	The green LED on viewfinder starts to blink in 8 Hz.
Warning for unloaded speed light	Orange LED in 4Hz blinks
Displayed while rewinding	Orange LED in 4Hz blink

* Unless the main switch is turned on, every display whole LCD disappear.

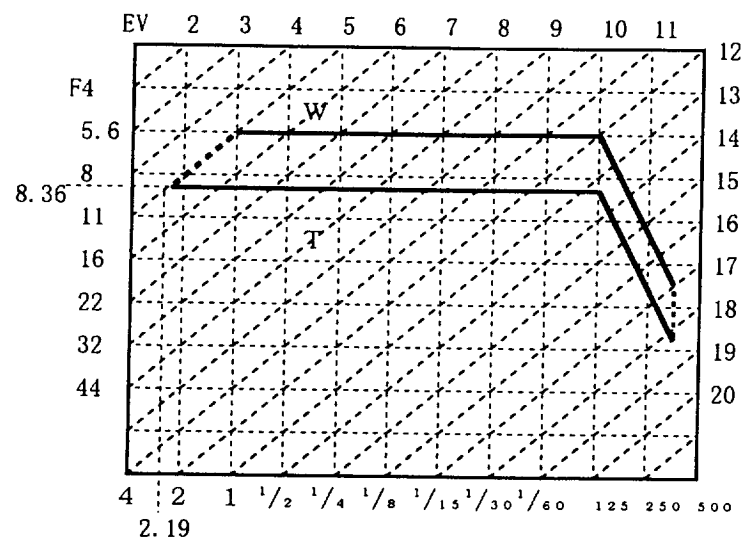
4. Each operation at flash mode

Set-up mode	Function	Shutter speed
Auto flash	In any low luminosity cases, the flash mode is automatically selected for FM control.	1/60 sec (W) to 1/125 sec (T)
Flash cancellation	No flash works regardless of any luminance level on any object.	1 sec (W) to 2.15 sec(T)
Flash command	Flash mode always works regardless of any luminance level on any object.	1/60 sec (W) to 1/125 sec (T)
Slow synch. flash	Any shutter speed longer than 1/8 sec. is automatically selected in the flash mode.	1/8 sec (W) to 1/4 sec (T)

5. Each operation switch and interlocking input terminal

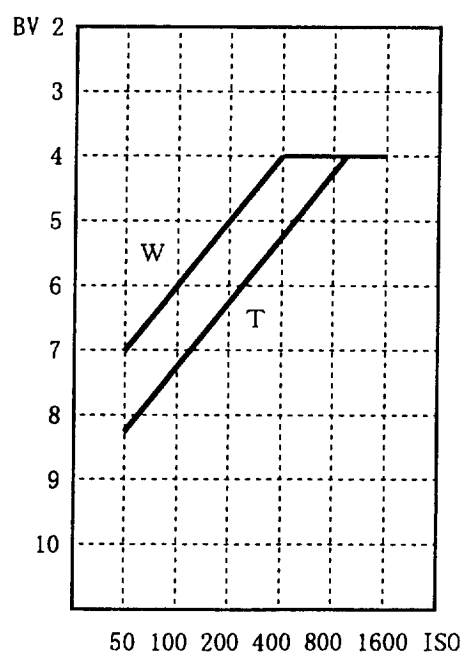
Code	Name of operation switch	Function	Category of switch
S 1	Pre-release switch	Photometry, metering, check oncharged speed light mode	For self-recovery
S 2	Shutter release switch	Focusing, exposure operation	For self-recovery
MSW	Main power supply switch	Turn-on / off of the main power supply	For brush
G S S	PAR-specified switch	Change-over between C/H/P	For brush
M O S	Mode switch	Routine operation mode such as 'cancel' to 'red-eye reduction' to 'self-timer even by a remote controller'	For self-recovery
S B S	Speed light mode switch	Routine operation mode such as 'auto flash' to 'flash cancel' to 'anytime flash' to 'slow synch. flash'	For self-recovery
F C S	Title selection switch	Selection of title mode	For self-recovery
D T S	Date selection switch	Selection of date mod	For self-recovery
M U S	Manual return switch	Mid-roll change : Rewinding of loaded film before the end of film roll	For self-recovery
S L S	Data selection switch	Selection of arranged data	For self-recovery
A J S	Adjustment switch	Correction of arranged data	For self-recovery
Z U S	Zoom-in switch	Driving of lens barrel from Wide-end to Tele-end position	For self-recovery
Z D S	Zoom-out switch	Driving of lens barrel from Tele-end to Wide-end position	For self-recovery
L L O	LL cover switch	Detection of open position from the LL cover driver	For micro switch
Z E S 1	Lens barrel encoder	Detection of the lens barrel position	For brush
Z E S 2			For brush

6. Figure of wiring on the shutter program



7. Auto flash

- (1) The AUTO mode is automatically set by setting the default mode or selecting the AUTO mode.
- (2) Under the situation of low luminance or of a backligh detection, the flash mode is automatically selected for controlling the FM.
- (3) The detected luminance level for auto flash function is as explained in the table below. In addition, the detected luminance level for auto flash function is automatically switched according to the applicable zooming coverage.



Applicable zooming coverage		Detected luminance level for the auto flash function
W	1	EV 11
	2	EV 11.25
	3	EV 11.375
	4	EV 11.25
	5	EV 11.5
T	6	EV 12.125

8. Functions for the manual inspection

(1) Operation procedures

1) The operation toward the manual inspection mode

- ① On the camera, the main switch shall be turned on and accordingly it is conductive. Then, the lens barrel shall be set to extend to somewhere between the Wide-end and the Tele-end positions.
- ② First of all, turn the mode switch on. Then, hold the condition that the mode switch is turned on, and turn on the speed light mode switch within 1 sec. Then, hold the condition that the both switches are turned on for 10 sec.
- ③ After 10 sec. from the operation above, the battery mark on LCD is automatically turned on and it means that the condition is prepared for the manual inspection mode.

2) 'Selection of command' and 'set-up of data'

- ① In case the speed light mode switch is operated while the mode switch is turned on, along with each operation, any No. in response to any certain command is displayed on the film counter.
For the No., refer to the list of inspection commands. Whenever the speed light mode switch is turned on, 1 is automatically added to the certain command No. In addition, after the command No. goes to 4, the No. returns to 0.
As any command No. is set either from No. 1 to 4 by operating the speed light mode switch, other command(s) goes to be reset.
- ② Set-up of the AF data in the bulb mode is as follows.
In case the mode switch is turned off while turning on the speed light mode switch, either the command 1 or 2 is displayed.
Then, the mode switch is turned on and the data goes to be displayed in due order. Then, the initial value after loading a battery is 00h.
Along with the addition, the value goes up to FFh and then it returns to 00h.
After selecting any data you require, turn off both the speed light mode switch and the mode switch.
Then, the data is completely set.
- ③ The way to set the ISO value in the command 3 and 4 is as follows.
Hold the condition that the speed light mode switch is turned on, and then turn off the mode switch.
Then, under the command 3 / 4-displayed condition, turn on the mode switch for the sake of addition in due order.
In addition, as an initial numerical value, the ISO value read from the data disk is displayed.
Then, after adding up to 'converted ISO 1600's value(s)' the value(s) returns to 'ISO

50's'.

As soon as your required data is selected, turn off both the speed light mode switch and the mode switch for the completion of setting the data.

3)Execution of inspection

- ① Select your required command from the column 2) and then operate a camera in regular manner.
- ② Then, the camera works in accordance with the set command.
Execution of the inspection can be repeatedly made.

4)Indication of zoom edge No.

- ① As the lens barrel is operated to drive by selecting either the zoom-in or zoom-out switch under either command from 1 to 4, the edge No. which expresses how many pulse(s) shifts from the beginning to the end is displayed for 1 sec. After turning off the either zoom switch.
In addition, the edge No. is not displayed during the zoom driving.

5)Indication of CHP

- ① As the zoom-out switch is turned on under the situation that the lens barrel stops at the Wide-end position, how the PAR-specified switch is set is read and then either 'C', 'H' or 'P' is displayed on the counter.

6)Re-set of command

- ① In order to continuously execute any other command in the available manual inspection mode, return to the operation procedure 1) and set the manual test mode again. Then, the timer is set to 3 sec.
- ② As any command is reset, the formerly set command returns to the initial value.
Then, it is impossible to execute the both commands all at once.
- ③ In addition, the ISO value which is set by the ISO value set-up command is maintained as it is.

7)Cancellation of the test mode

- ① Turn off the main power supply switch and cancel the test mode
- ② Even selecting the command '0', the test mode is cancelled by removing your finger(s) from a button on the camera.
- ③ Even if the lens barrel is operated to drive to the wide-end position for 2 min. without doing any other operation, the manual mode is not cancelled.
- ④ Even if the cartridge cover is opened under the bulb condition, the bulb mode is mechanically maintained.

(2)The list of test commands

① The contents of each test command is as follows. As any command No. is selected, the command mode with '○' mark mentioned in the table below starts to function.

Command No.				Command	Display		Contents
1	2	3	4		At set-up moment	Result	
○				Set-up of bulb	AF data		The lens barrel is extended to the position of step No. in response to the set AF distance data, and then the lens barrel goes into the bulb mode.
	○			Set-up of AF	AF data		Photography is made based upon the step No. in response to the set AF distance data.
		○		display of AF result(s)		AF data	Whenever the pre-release switch is turned on, the AF distance data is displayed.
			○	Read-out of EV value		EV data	Whenever the S1 is turned on, the calculated AE result is displayed.
		○	○	Set-up of ISO value	ISO value data	ISO value data	The ISO value read from the disk is displayed. Or, the ISO value is set and then the exposure control is made by the set ISO value.
○	○	○	○	Display of zoom mode		Zoom position	When the lens barrel is operated to drive by either the zoom-in or the zoom-out switch, the edge No. which means how many edges are shifted from the beginning until the end of lens barrel's motion is displayed for 1 sec. from the moment of turning off either zoom switch.
○	○	○	○	Display of CHP		CHP	When operating the zoom-out switch for the lens barrel on the Wide-end position, arranged either C, H or P is displayed.

(3) Numerical value data

1) AF data

- ① The AF data is expressed in the hexadecimal system such as '00h' to 'FFh'.
- ② Each '0' to 'F' is displayed on the film counter.

2) EV value

- ① Two-digit is used on the film counter.
This is indicated in the hexadecimal system.

3) Zoom edge

- ① This is indicated in the hexadecimal system.
Two-digit is used on the film counter.

4) Set-up of the ISO value

- ① On the film counter two-digit is used for displaying an set ISO value as follows

Set ISO value	Displayed data
5 0	0 5
1 0 0	1 0
2 0 0	2 0
4 0 0	4 0
8 0 0	8 0
1 6 0 0	1 6

5) CHP indication

- ① Each 'C', 'H' and 'P' is displayed in the one's place on the film counter.

(4)Command : The conversion list from the displayed AF result(s) / AF set-up

Displayed No.	Distance range in m	Displayed No.	Distance range in m	Displayed No.	Distance range in m
00	無限 ~ (128.000)	30	1.347 ~ (1.320)	60	0.670 ~ (0.663)
01	128.000 ~ (42.667)	31	1.320 ~ (1.293)	61	0.663 ~ (0.656)
02	42.667 ~ (25.600)	32	1.293 ~ (1.267)	62	0.656 ~ (0.650)
03	25.600 ~ (18.286)	33	1.267 ~ (1.243)	63	0.650 ~ (0.643)
04	18.286 ~ (14.222)	34	1.243 ~ (1.219)	64	0.643 ~ (0.637)
05	14.222 ~ (11.636)	35	1.219 ~ (1.196)	65	0.637 ~ (0.631)
06	11.636 ~ (9.846)	36	1.196 ~ (1.174)	66	0.631 ~ (0.624)
07	9.846 ~ (8.533)	37	1.174 ~ (1.153)	67	0.624 ~ (0.618)
08	8.533 ~ (7.529)	38	1.153 ~ (1.133)	68	0.618 ~ (0.612)
09	7.529 ~ (6.737)	39	1.133 ~ (1.113)	69	0.612 ~ (0.607)
0A	6.737 ~ (6.095)	3A	1.113 ~ (1.094)	6A	0.607 ~ (0.601)
0B	6.095 ~ (5.565)	3B	1.094 ~ (1.076)	6B	0.601 ~ (0.595)
0C	5.565 ~ (5.120)	3C	1.076 ~ (1.058)	6C	0.595 ~ (0.590)
0D	5.120 ~ (4.741)	3D	1.058 ~ (1.041)	6D	0.590 ~ (0.584)
0E	4.741 ~ (4.414)	3E	1.041 ~ (1.024)	6E	0.584 ~ (0.579)
0F	4.414 ~ (4.129)	3F	1.024 ~ (1.008)	6F	0.579 ~ (0.574)
10	4.129 ~ (3.879)	40	1.008 ~ (0.992)	70	0.574 ~ (0.569)
11	3.879 ~ (3.657)	41	0.992 ~ (0.977)	71	0.569 ~ (0.564)
12	3.657 ~ (3.459)	42	0.977 ~ (0.962)	72	0.564 ~ (0.559)
13	3.459 ~ (3.282)	43	0.962 ~ (0.948)	73	0.559 ~ (0.554)
14	3.282 ~ (3.122)	44	0.948 ~ (0.934)	74	0.554 ~ (0.549)
15	3.122 ~ (2.977)	45	0.934 ~ (0.921)	75	0.549 ~ (0.545)
16	2.977 ~ (2.844)	46	0.921 ~ (0.908)	76	0.545 ~ (0.540)
17	2.844 ~ (2.723)	47	0.908 ~ (0.895)	77	0.540 ~ (0.536)
18	2.723 ~ (2.612)	48	0.895 ~ (0.883)	78	0.536 ~ (0.531)
19	2.612 ~ (2.510)	49	0.883 ~ (0.871)	79	0.531 ~ (0.527)
1A	2.510 ~ (2.415)	4A	0.871 ~ (0.859)	7A	0.527 ~ (0.522)
1B	2.415 ~ (2.327)	4B	0.859 ~ (0.848)	7B	0.522 ~ (0.518)
1C	2.327 ~ (2.246)	4C	0.848 ~ (0.837)	7C	0.518 ~ (0.514)
1D	2.246 ~ (2.169)	4D	0.837 ~ (0.826)	7D	0.514 ~ (0.510)
1E	2.169 ~ (2.098)	4E	0.826 ~ (0.815)	7E	0.510 ~ (0.506)
1F	2.098 ~ (2.032)	4F	0.815 ~ (0.805)	7F	0.506 ~ (0.502)
20	2.032 ~ (1.969)	50	0.805 ~ (0.795)	80	0.502 ~ (0.498)
21	1.969 ~ (1.910)	51	0.795 ~ (0.785)	81	0.498 ~ (0.494)
22	1.910 ~ (1.855)	52	0.785 ~ (0.776)	82	0.494 ~ (0.490)
23	1.855 ~ (1.803)	53	0.776 ~ (0.766)	83	0.490 ~ (0.487)
24	1.803 ~ (1.753)	54	0.766 ~ (0.757)	84	0.487 ~ (0.483)
25	1.753 ~ (1.707)	55	0.757 ~ (0.749)	85	0.483 ~ (0.479)
26	1.707 ~ (1.662)	56	0.749 ~ (0.740)	86	0.479 ~ (0.476)
27	1.662 ~ (1.620)	57	0.740 ~ (0.731)	87	0.476 ~ (0.472)
28	1.620 ~ (1.580)	58	0.731 ~ (0.723)	88	0.472 ~ (0.469)
29	1.580 ~ (1.542)	59	0.723 ~ (0.715)	89	0.469 ~ (0.465)
2A	1.542 ~ (1.506)	5A	0.715 ~ (0.707)	8A	0.465 ~ (0.462)
2B	1.506 ~ (1.471)	5B	0.707 ~ (0.699)	8B	0.462 ~ (0.459)
2C	1.471 ~ (1.438)	5C	0.699 ~ (0.692)	8C	0.459 ~ (0.456)
2D	1.438 ~ (1.407)	5D	0.692 ~ (0.684)	8D	0.456 ~ (0.452)
2E	1.407 ~ (1.376)	5E	0.684 ~ (0.677)	8E	0.452 ~ (0.449)
2F	1.376 ~ (1.347)	5F	0.677 ~ (0.670)		

(5)Command: The list of converted from the displayed EV value(s)

EV value	Displayed No.	EV value	Displayed No.	EV value	Displayed No.
5	2 8 h	10	5 0 h	15	7 8 h
1/8	2 9 h	1/8	5 1 h	1/8	7 9 h
2/8	2 A h	2/8	5 2 h	2/8	7 A h
3/8	2 B h	3/8	5 3 h	3/8	7 B h
4/8	2 C h	4/8	5 4 h	4/8	7 C h
5/8	2 D h	5/8	5 5 h	5/8	7 D h
6/8	2 E h	6/8	5 6 h	6/8	7 E h
7/8	2 F h	7/8	5 7 h	7/8	7 F h
6	3 0 h	11	5 8 h	16	8 0 h
1/8	3 1 h	1/8	5 9 h	1/8	8 1 h
2/8	3 2 h	2/8	5 A h	2/8	8 2 h
3/8	3 3 h	3/8	5 B h	3/8	8 3 h
4/8	3 4 h	4/8	5 C h	4/8	8 4 h
5/8	3 5 h	5/8	5 D h	5/8	8 5 h
6/8	3 6 h	6/8	5 E h	6/8	8 6 h
7/8	3 7 h	7/8	5 F h	7/8	8 7 h
7	3 8 h	12	6 0 h	17	8 8 h
1/8	3 9 h	1/8	6 1 h		
2/8	3 A h	2/8	6 2 h		
3/8	3 B h	3/8	6 3 h		
4/8	3 C h	4/8	6 4 h		
5/8	3 D h	5/8	6 5 h		
6/8	3 E h	6/8	6 6 h		
7/8	3 F h	7/8	6 7 h		
8	4 0 h	13	6 8 h		
1/8	4 1 h	1/8	6 9 h		
2/8	4 2 h	2/8	6 A h		
3/8	4 3 h	3/8	6 B h		
4/8	4 4 h	4/8	6 C h		
5/8	4 5 h	5/8	6 D h		
6/8	4 6 h	6/8	6 E h		
7/8	4 7 h	7/8	6 F h		
9	4 8 h	14	7 0 h		
1/8	4 9 h	1/8	7 1 h		
2/8	4 A h	2/8	7 2 h		
3/8	4 B h	3/8	7 3 h		
4/8	4 C h	4/8	7 4 h		
5/8	4 D h	5/8	7 5 h		
6/8	4 E h	6/8	7 7 h		
7/8	4 F h	7/8	7 8 h		

DISASSEMBLING/ASSEMBLING/ADJUSTMENT

DISASSEMBLING

1 . How to separate the lens barrel area from the rear body

REMOVAL OF BATTERY	D 1
GRIP COVER	D 1
SLIDE COVER	D 2
ELECTRIC DISCHARGE FROM THE MAIN CAPACITOR	D 3
LINING COVER	D 3
REAR COVER UNIT	D 4
FRONT COVER UNIT	D 4
PRESSURE PLATE UNIT	D 5
MAIN FPC UNIT	D 6
FINDER UNIT	D 7
REMOVAL OF THE LENS BARREL UNIT	D 8

2 . REAR BODY UNIT

EYELET, CARTRIDGE COVER LOCK BASE PLATE UNIT	D 8
LL BASE PLATE UNIT	D 9
D/D SENSOR UNIT, INDUCTOR UNIT	D 9
FILM ADVANCE GEAR, SPOOL, EACH SMALL PART ARRANGED	D 1 0

3 . LENS BARREL

LENS BARREL MOTOR, FILM STOPPER SPRING UNIT	D 1 1
LOCK BAR	D 1 1
STRAIGHT KEY BASE PLATE UNIT	D 1 2
LENS HOUSING, ENCODER FPC UNIT	D 1 2
STRAIGHT KEY	D 1 3
CAME RING UNIT - LARGE	D 1 3
CAME RING UNIT - SMALL	D 1 4
1 ST LENS GROUP, 2 ND LENS GROUP, 3 RD LENS GROUP, SHUTTER UNIT	D 1 4

ASSEMBLY / ADJUSTMENT

1 . LENS BARREL

SHUTTER, 2 ND LENS GROUP UNIT	A 1
2 ND GROUP MOVE RING	A 1
1 ST LENS GROUP UNIT	A 2
SPRING FOR 2 ND AND 3 RD LENS GROUP	A 2
3 RD LENS GROUP UNIT	A 3
CAME RING UNIT - SMALL	A 3

CAME RING UNIT - LARGE	A 4
STRAIGHT KEY	A 4
ENCODER FPC UNIT, FIXED LENS BARREL	A 5
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LL BASE PLATE UNIT	A 1 0
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DISASSEMBLING / ASSEMBLING / ADJUSTMENT

⚠ WARNING	
	• Due to its internal high voltage area, make sure to check the safety when removing the cover. • Be sure to discharge the static electricity from the main condenser according to the instruction in the repair manual after removing the front cover.

Note :

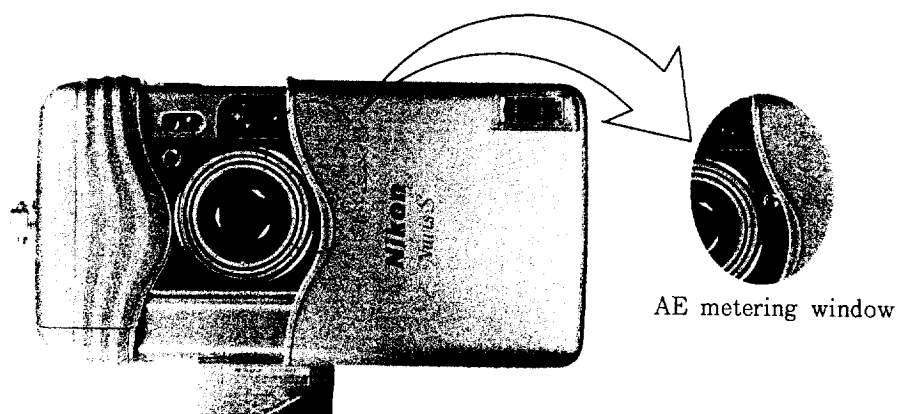
- ① Be sure to take off the battery before disassembly.
- ② At disassembly, make sure to memorize how to arrange the wires, how to fix the screws, and the types of used screws.
- ③ Be sure to get yourself grounded because of the static electricity which exerts any serious adverse effect to ICs.
- ④ Make sure which side is back or forth when taking off the gear.

DISASSEMBLING

1. How to separate the lens barrel area from the rear body

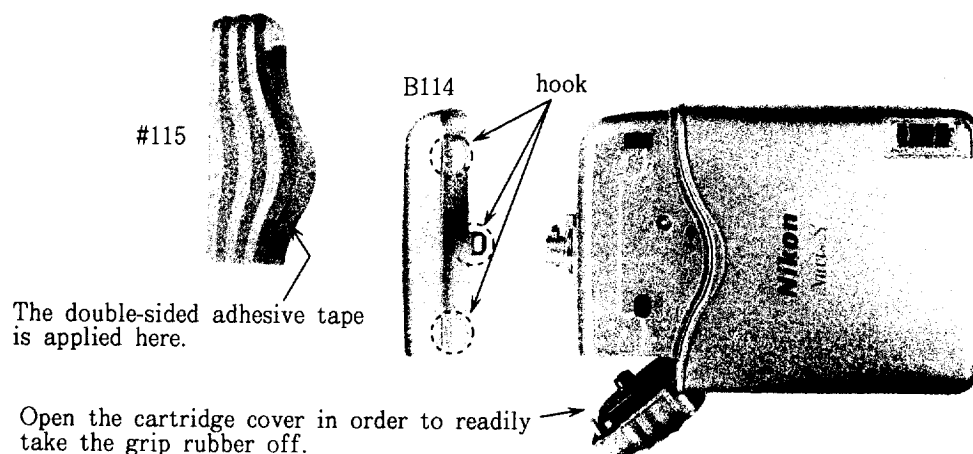
REMOVAL OF BATTERY

- Slide the slide cover until it covers the AE metering window as shown in the photo below. Then, open the battery cover and take the battery off.



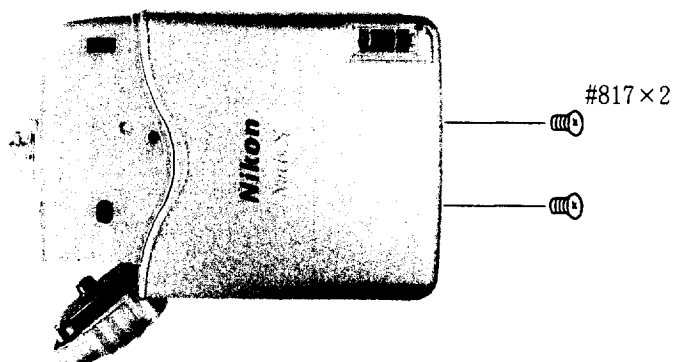
GRIP COVER

- Remove the grip rubber and then remove the grip cover.

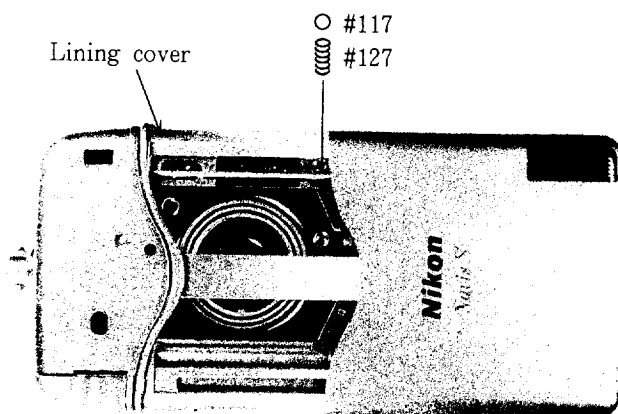


SLIDE COVER

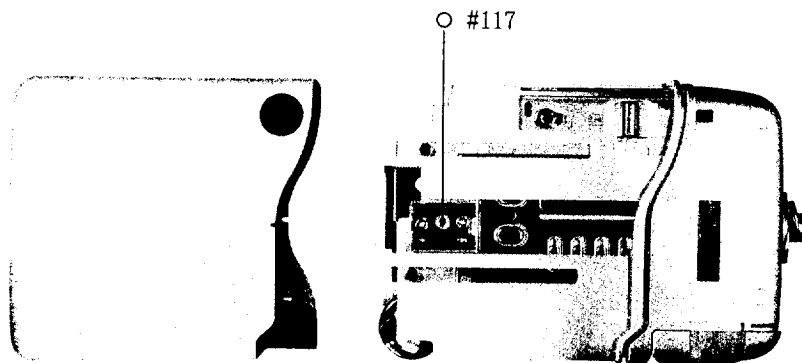
- Remove 2 pieces of the screw #817



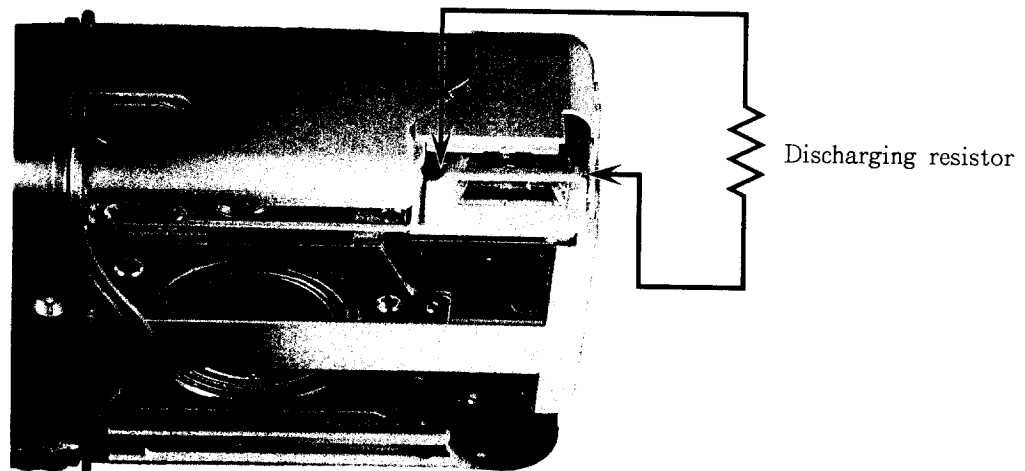
- Settle the body with the lens up, and press the lining cover edge by finger(s). Then, slowly slide the slide cover until where the slide cover click ball #117 can be seen.
- Take out the click ball #117 for slide cover and the spring #127.



- Settle the body with the LCD panel up. Then, slide the slide cover and remove it.
- Take out the click ball #117 for slide cover.



ELECTRIC DISCHARGE FROM THE MAIN CAPACITOR

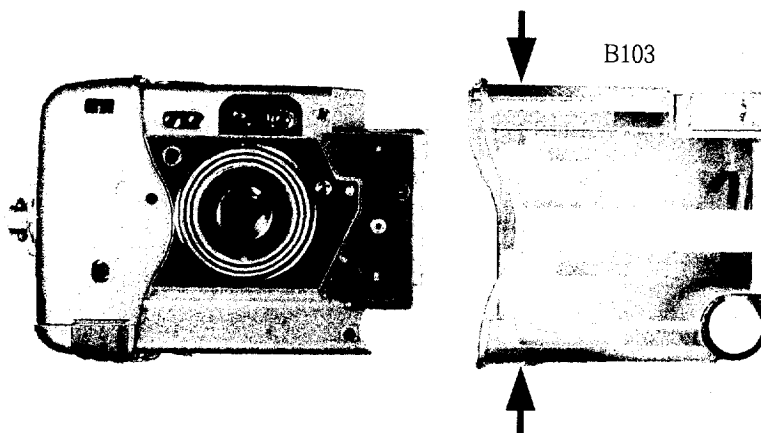
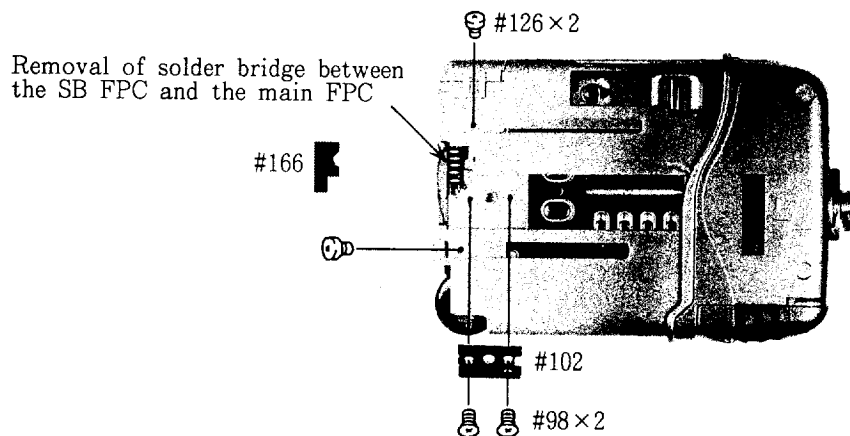


- Discharge the electricity between the both terminals of Xe tubes.
- For the electric discharge, employ the resistor of approximately $2K\Omega/5W$.

LINING COVER

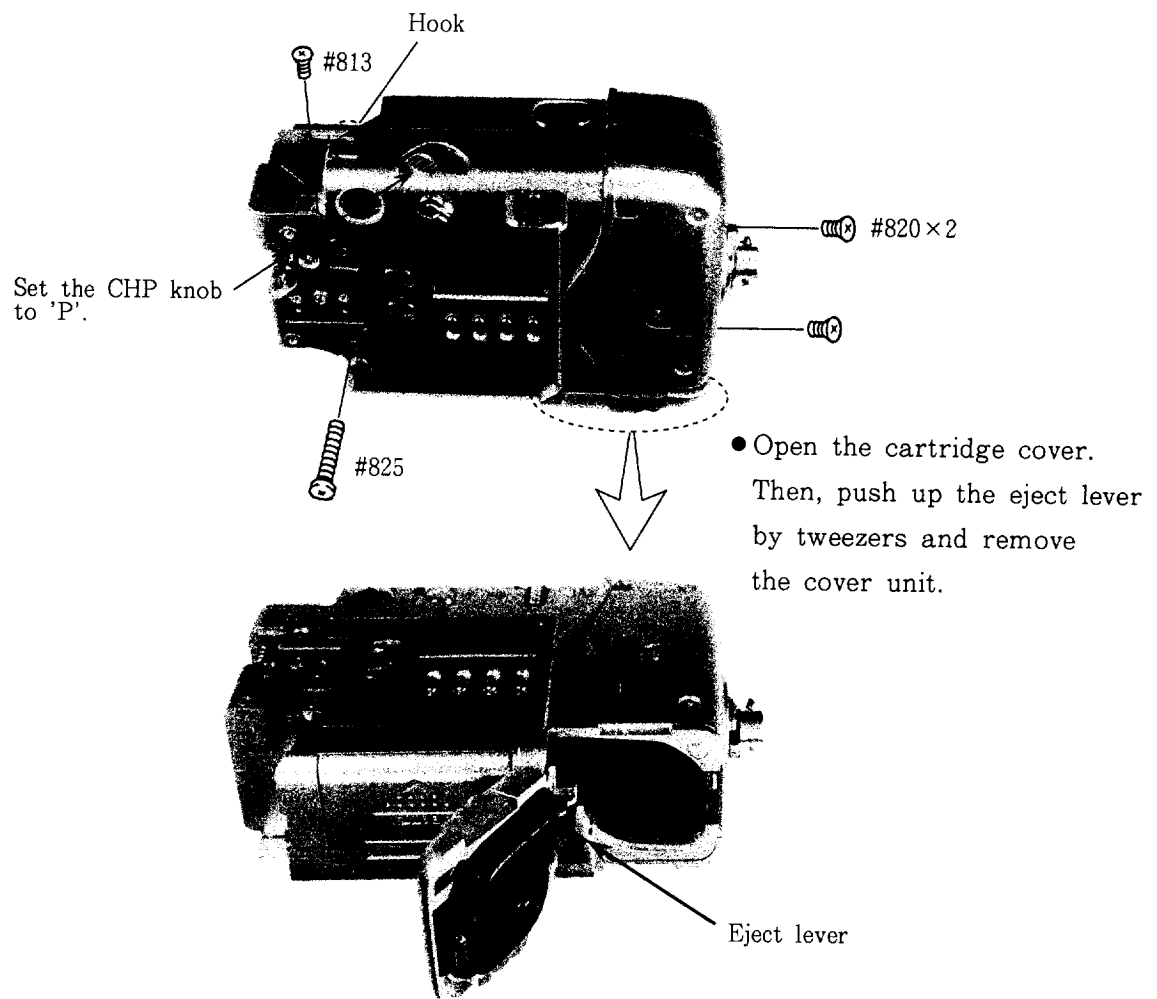
- Peel off the SB FPC cover #166 and then remove the solder bridge.

Note : For removal of the SB FPC cover, slightly slide the lining cover B103 and set the SB FPC free.



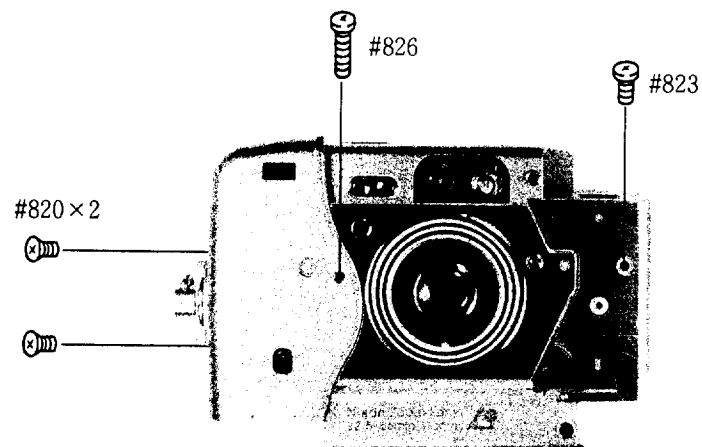
- As shown in the figure, lightly press the lining cover from both upper and lower sides by fingers in order to bend it. While bending it, slide the lining cover and remove it.

REAR COVER UNIT

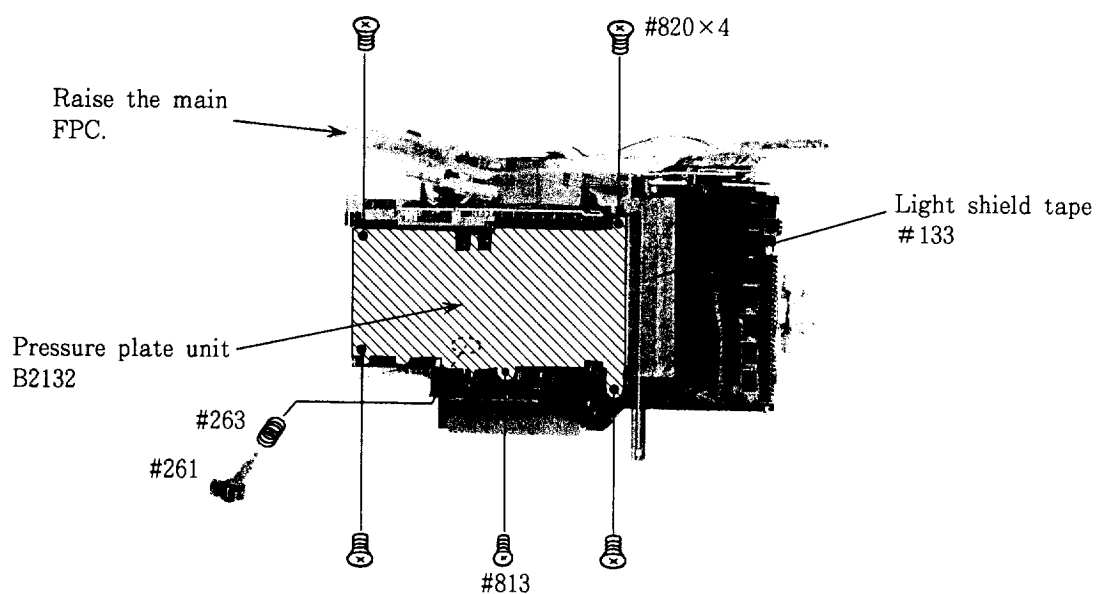
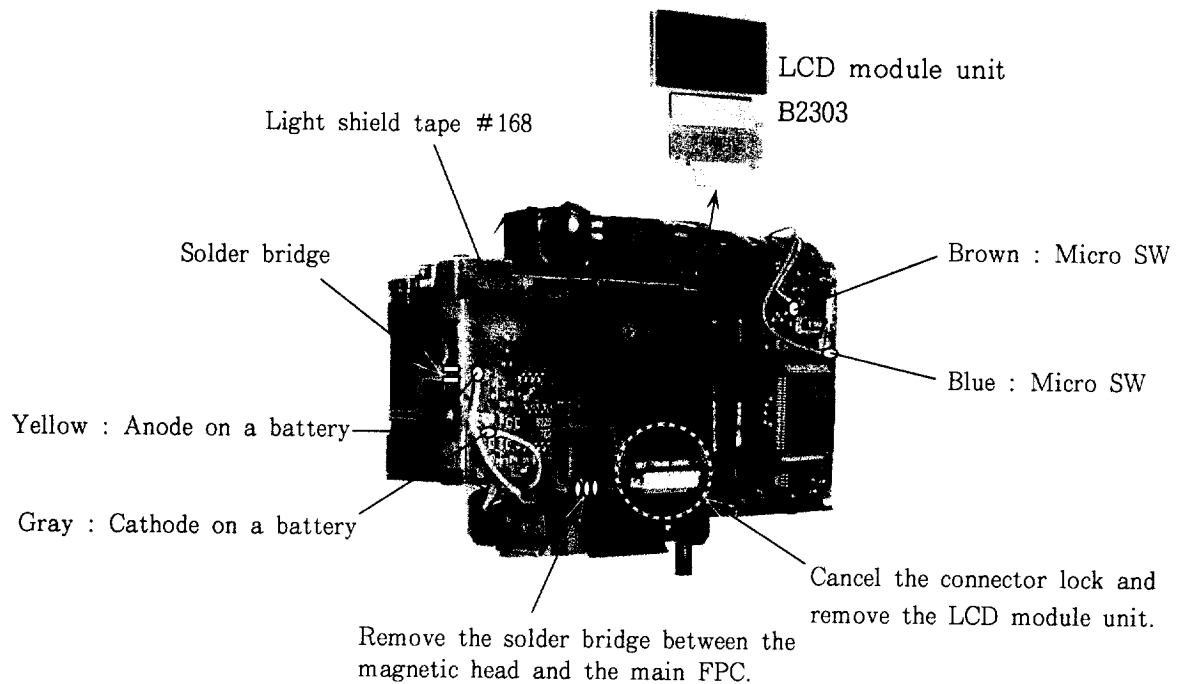


FRONT COVER UNIT

- As the front cover unit is removed, 2 lens barrel curtains can be removed.



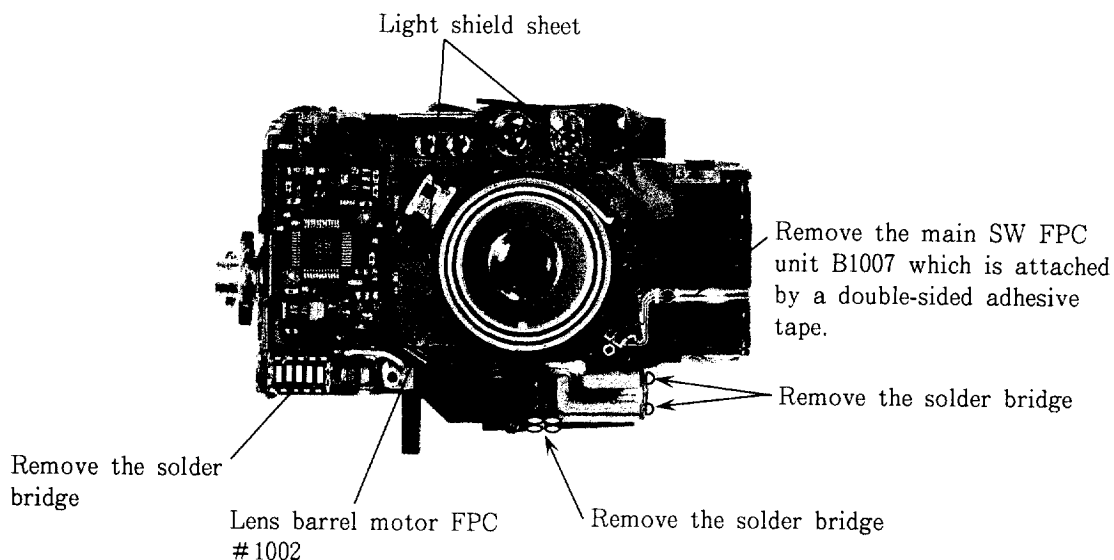
PRESSURE PLATE UNIT



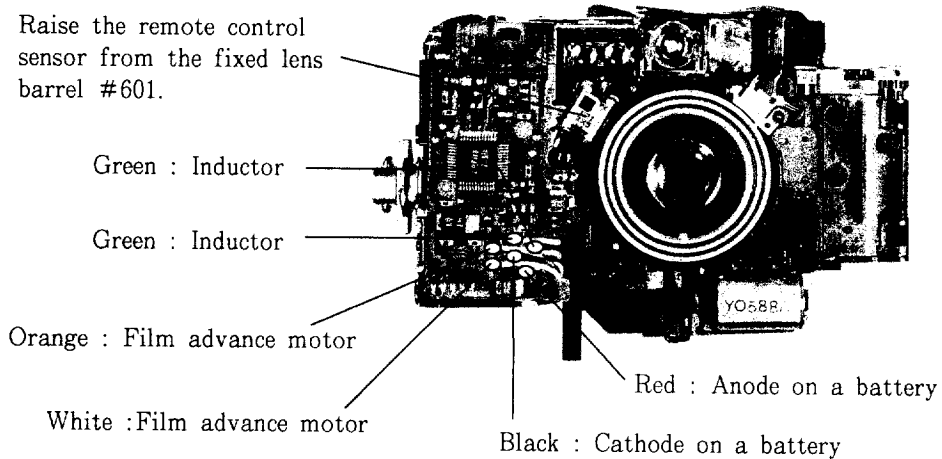
As the pressure plate unit B2132 is removed, the pad #261 and the spring #263 can be removed from beneath the magnetic head.

MAIN FPC UNIT

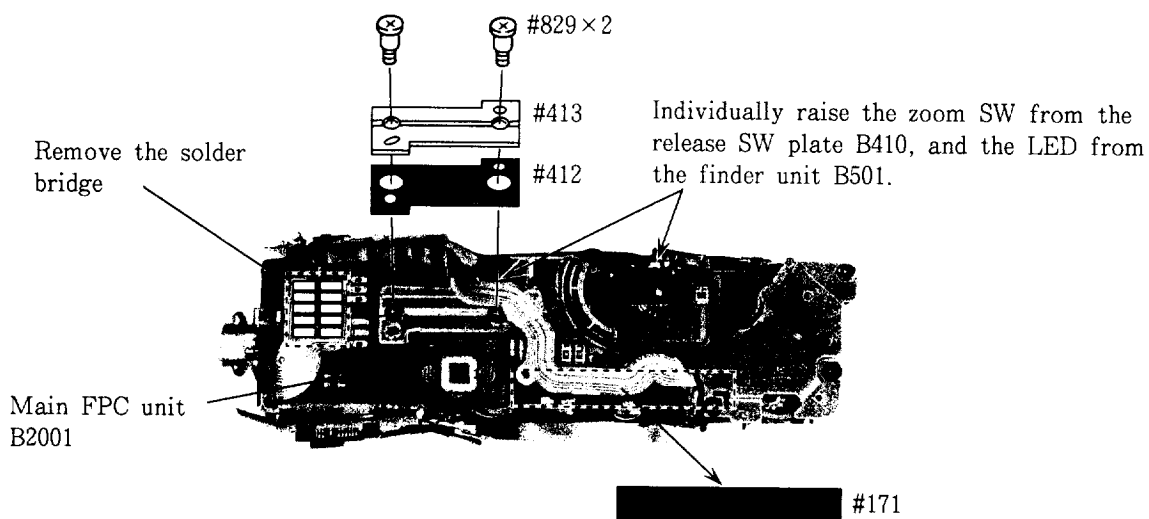
- Remove the light shield sheet, the main SW FPC and the lens barrel motor FPC.



- Remove each lead wire.

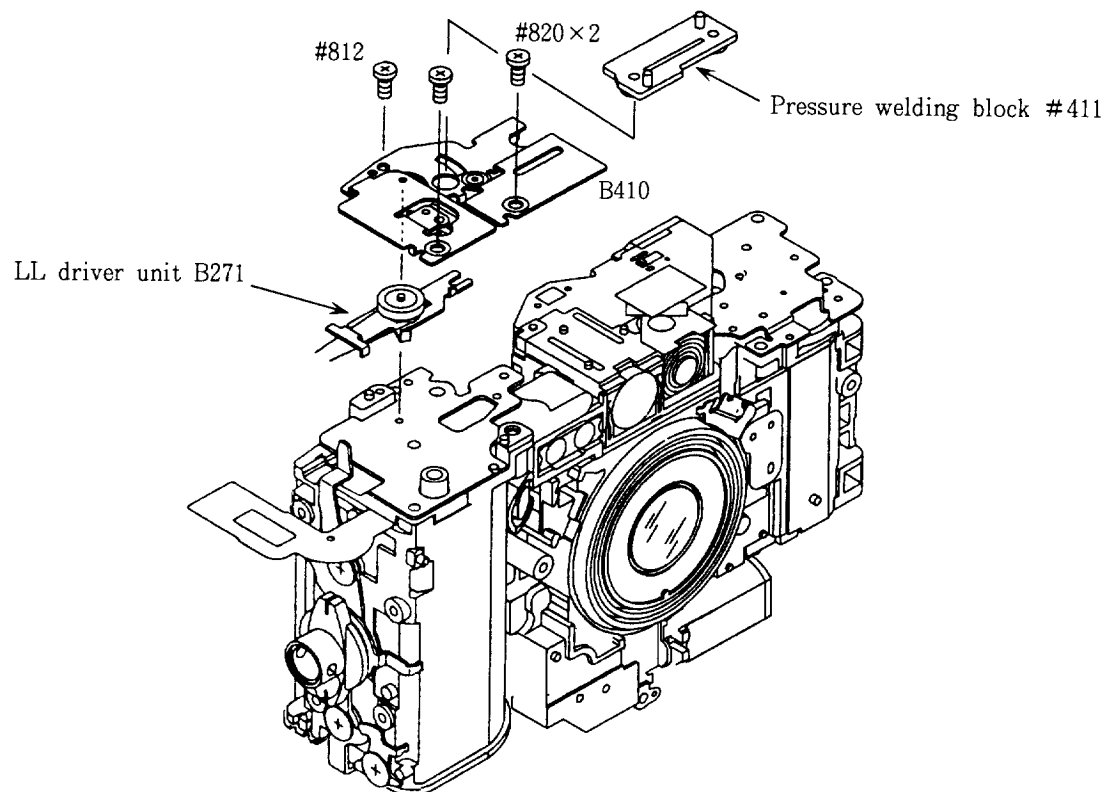


- Remove the main FPC.

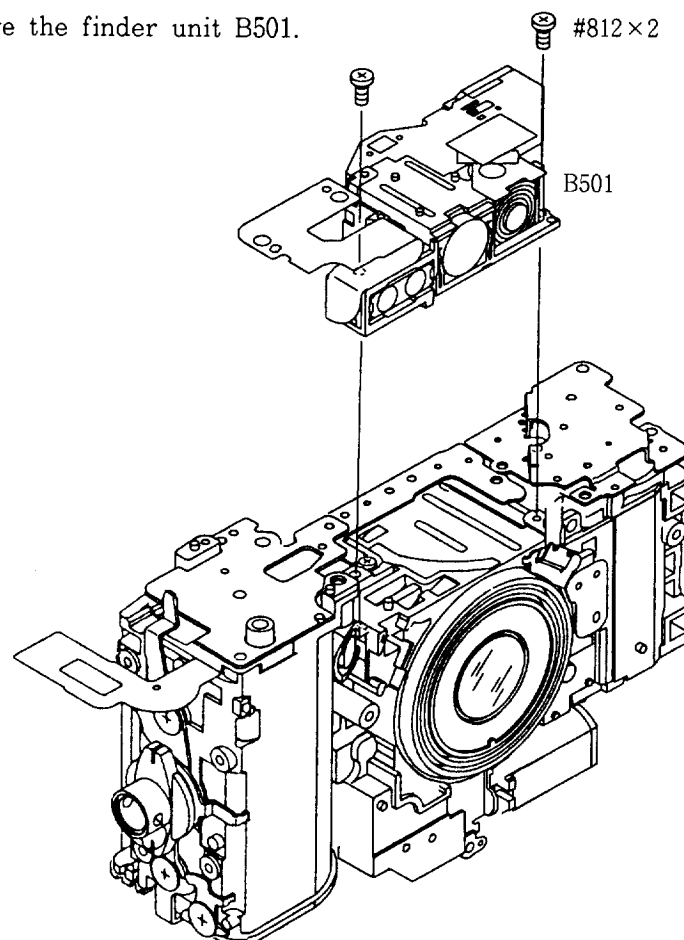


FINDER UNIT

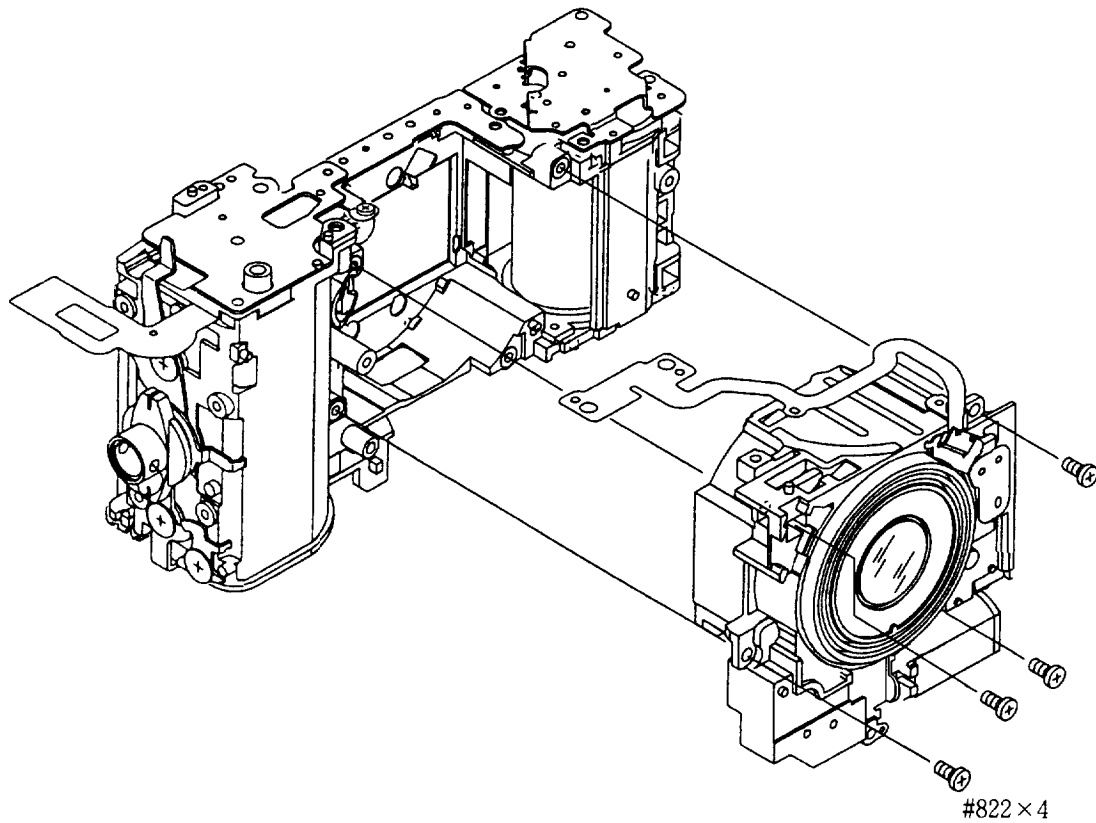
- Remove the release SW base plate unit B410.



- Remove the finder unit B501.

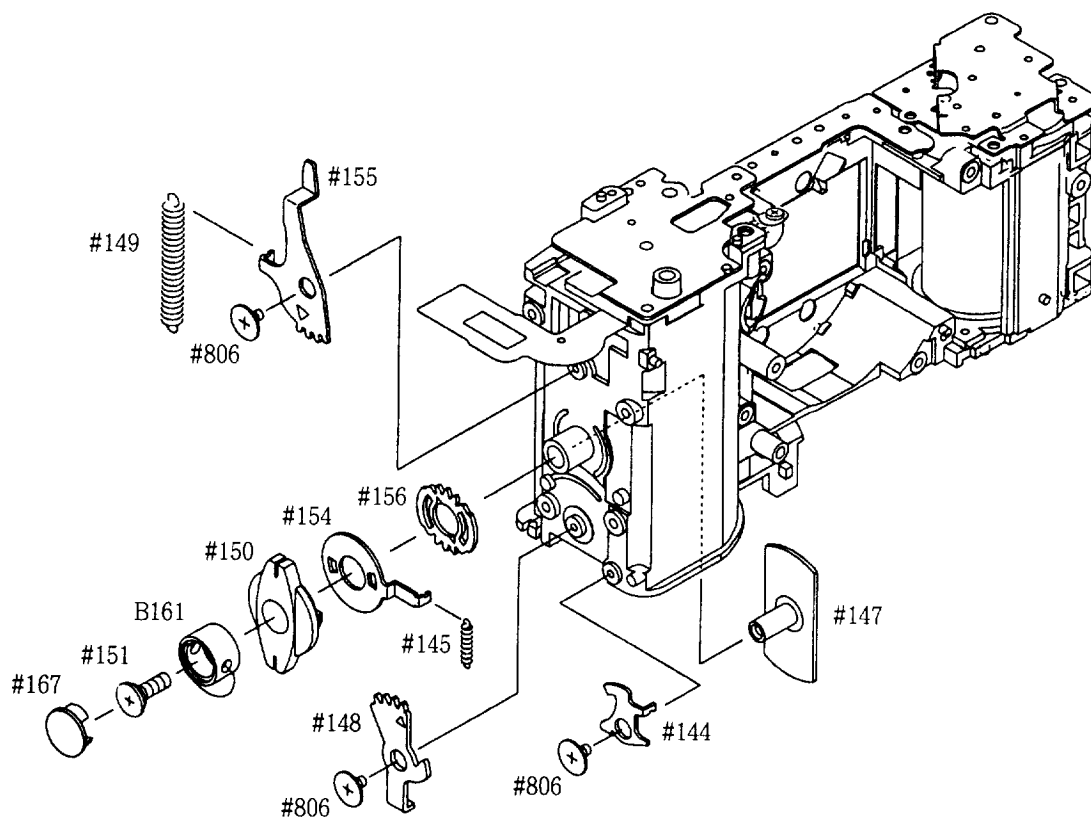


REMOVAL OF THE LENS BARREL UNIT

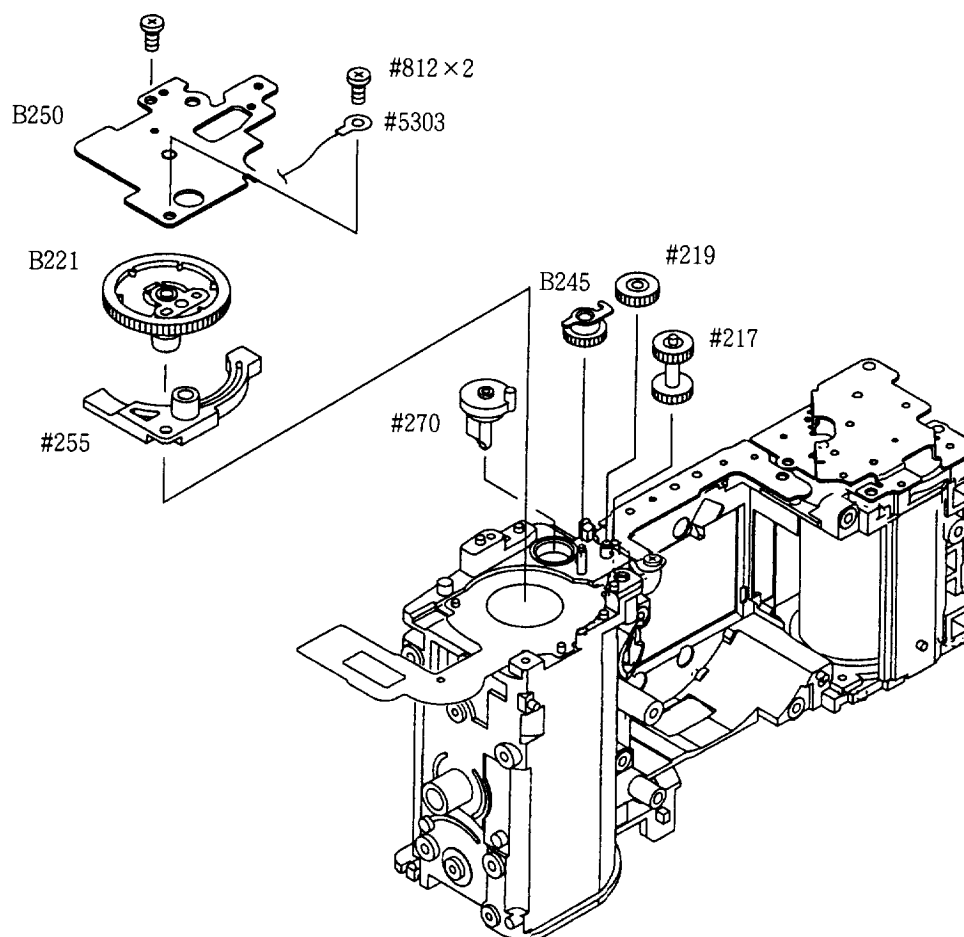


2. REAR BODY UNIT

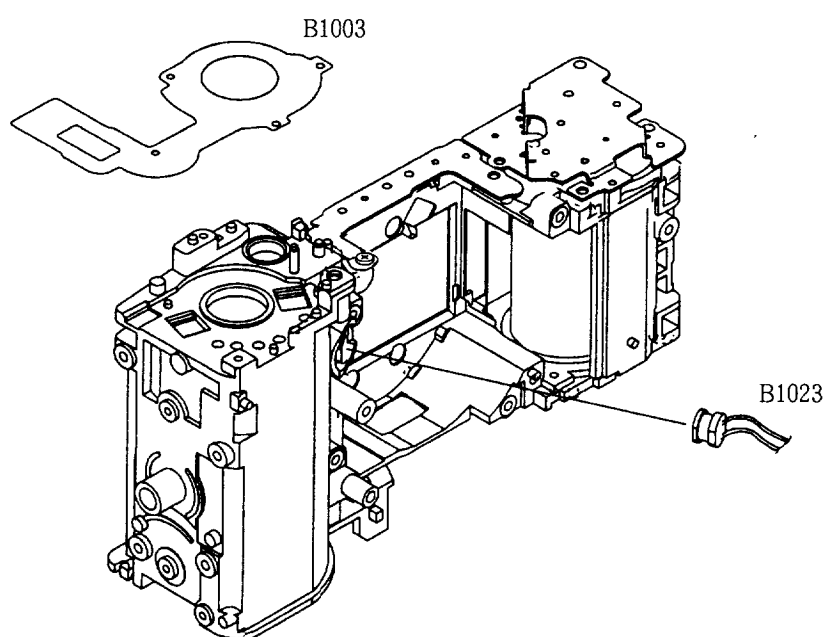
EYELET, CARTRIDGE COVER LOCK BASE PLATE UNIT



LL BASE PLATE UNIT

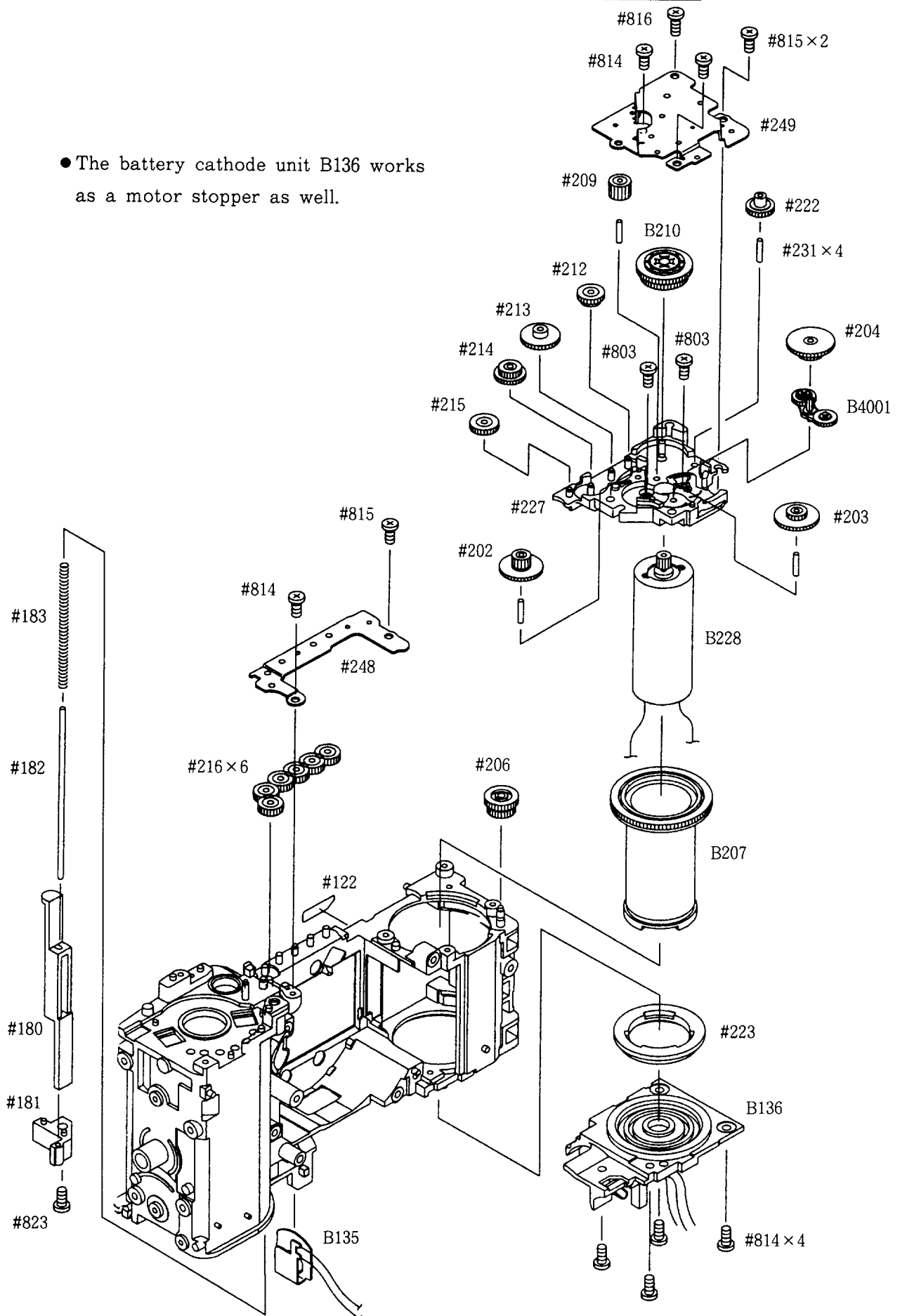


D/D SENSOR UNIT, INDUCTOR UNIT



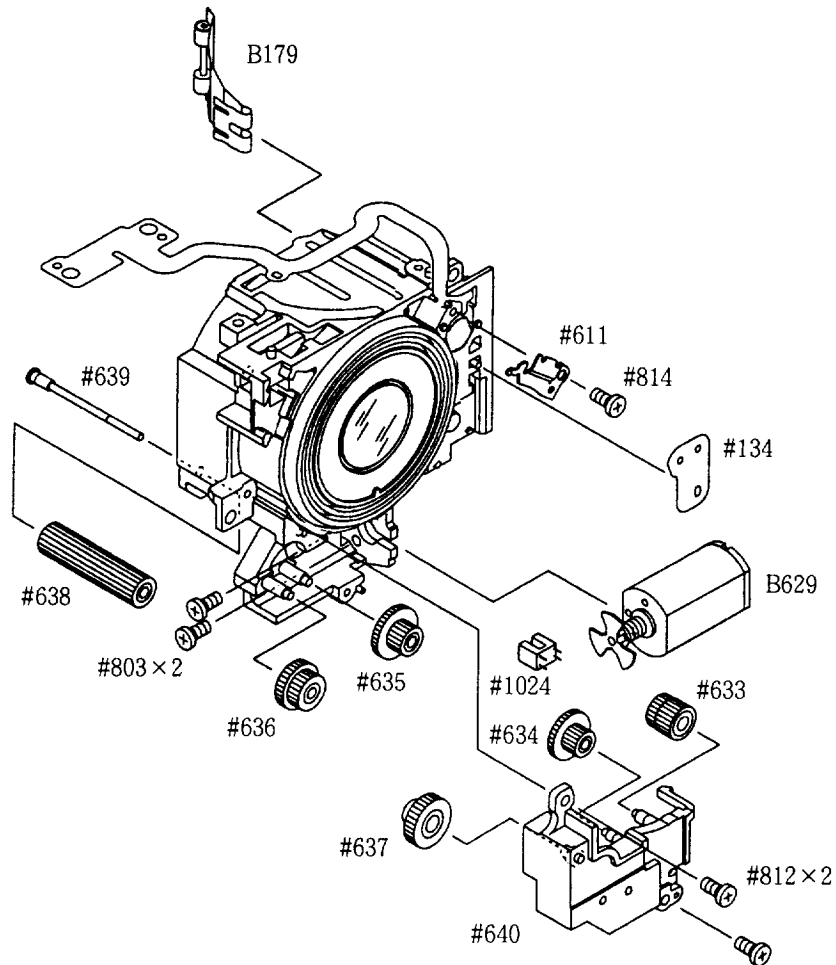
FILM ADVANCE GEAR, SPOOL, EACH SMALL PART ARRANGED

- The battery cathode unit B136 works as a motor stopper as well.

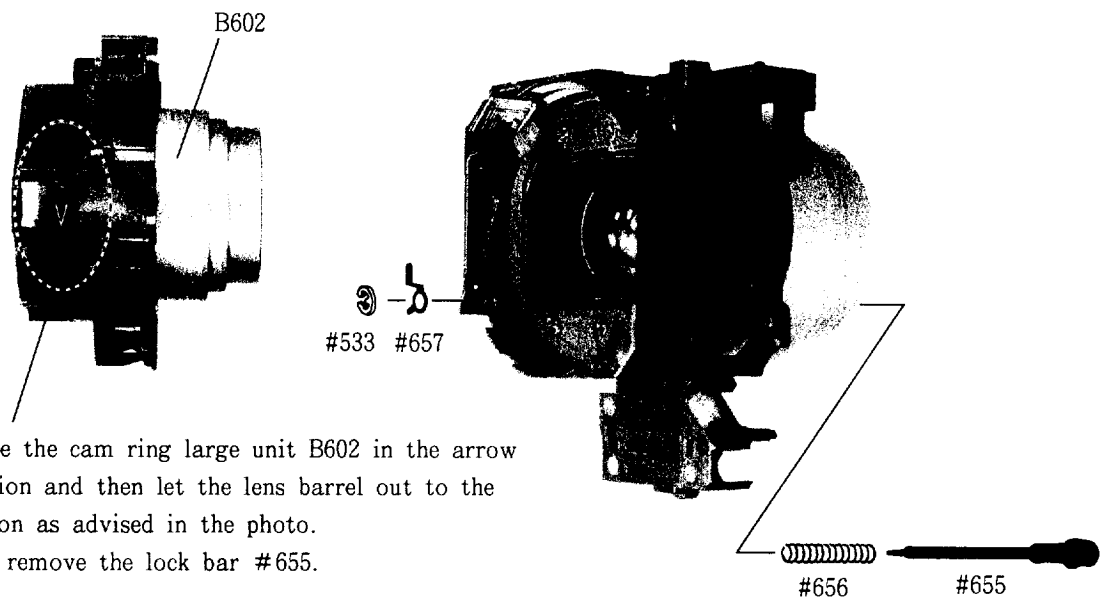


3. LENS BARREL

LENS BARREL MOTOR, FILM STOPPER SPRING UNIT



LOCK BAR

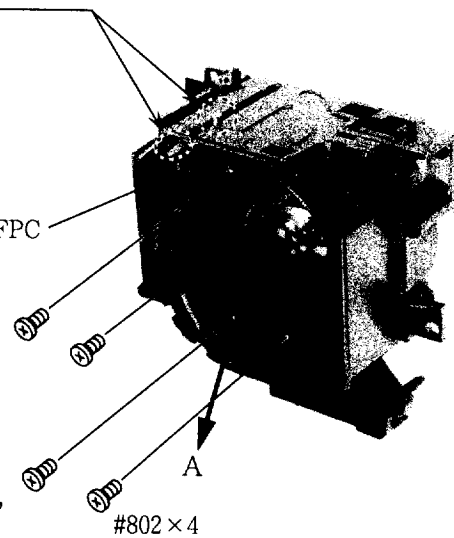


Rotate the cam ring large unit B602 in the arrow direction and then let the lens barrel out to the position as advised in the photo.
Then, remove the lock bar #655.

STRAIGHT KEY BASE PLATE UNIT

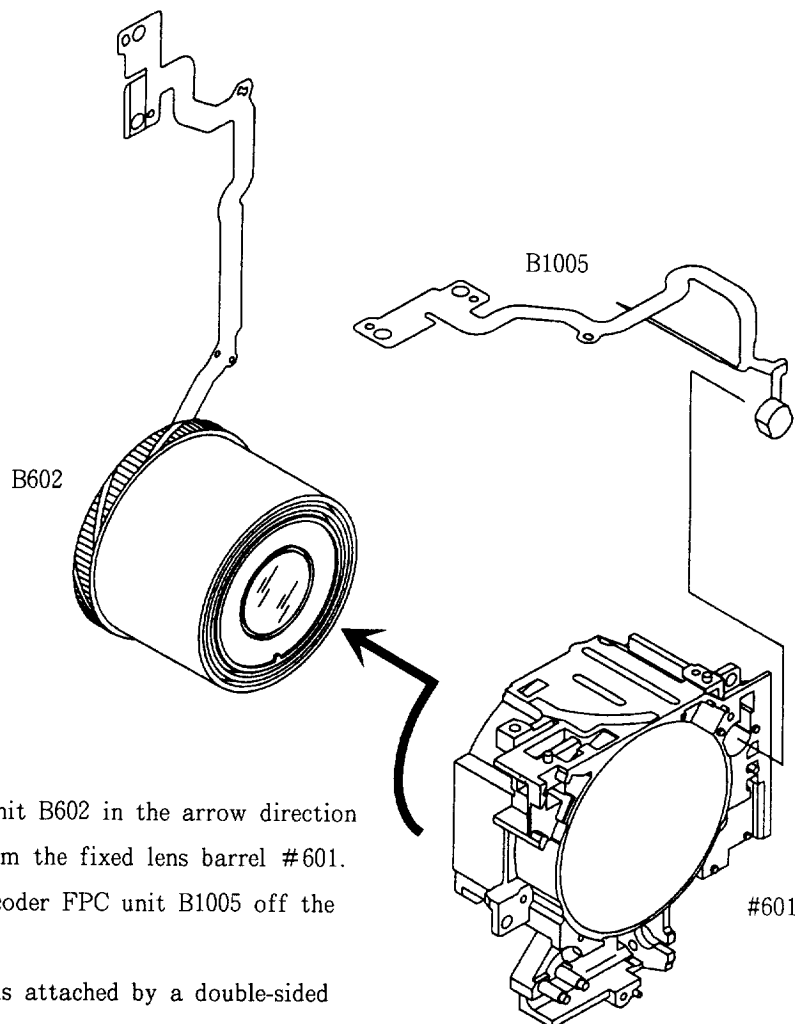
Caution : Be sure to carefully remove both the encoder brush and the finder interlock pin on the straight key base plate B605.

Shutter FPC



- While pulling out the shutter FPC rearward, remove the straight key base plate B605 in the arrow A direction.

LENS HOUSING, ENCODER FPC UNIT

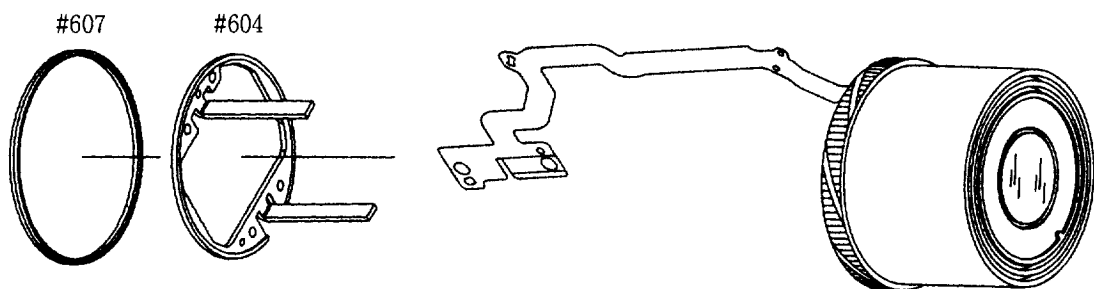
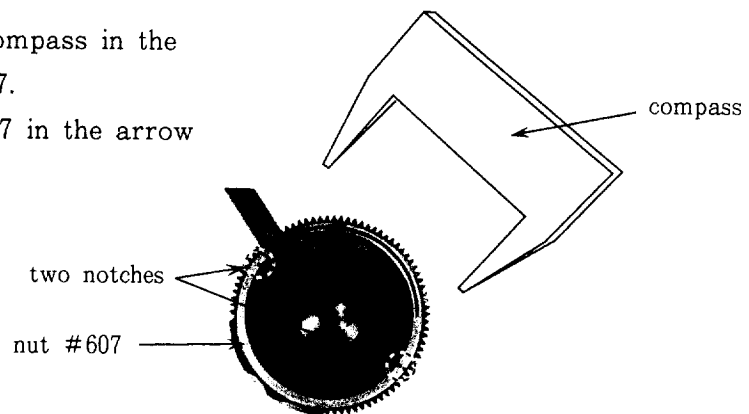


- ① Rotate the cam ring unit B602 in the arrow direction and then remove it from the fixed lens barrel #601.
- ② Peel the lens barrel encoder FPC unit B1005 off the fixed lens barrel #601.

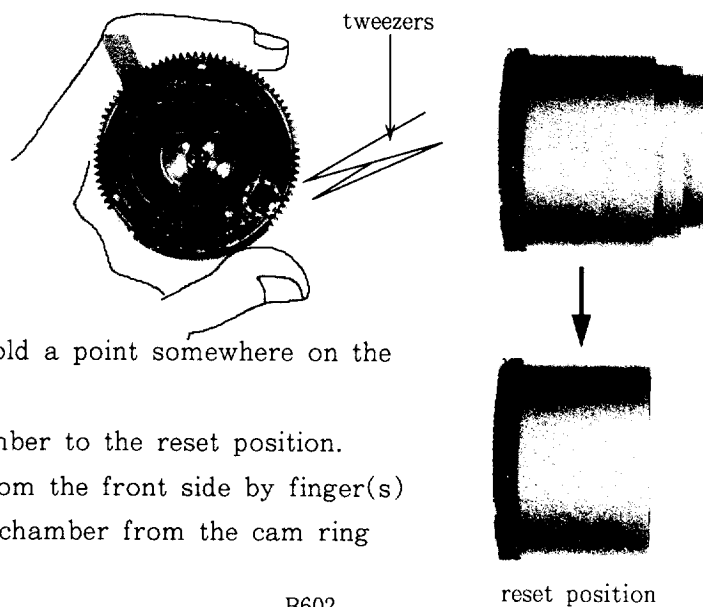
The encoder FPC unit is attached by a double-sided adhesive tape and an adhesive.

STRAIGHT KEY

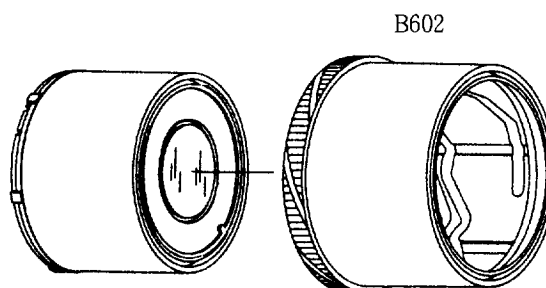
- Place the tip points of compass in the two notches for nut #607. Then, rotate the nut #607 in the arrow direction and remove it.



CAME RING UNIT - LARGE

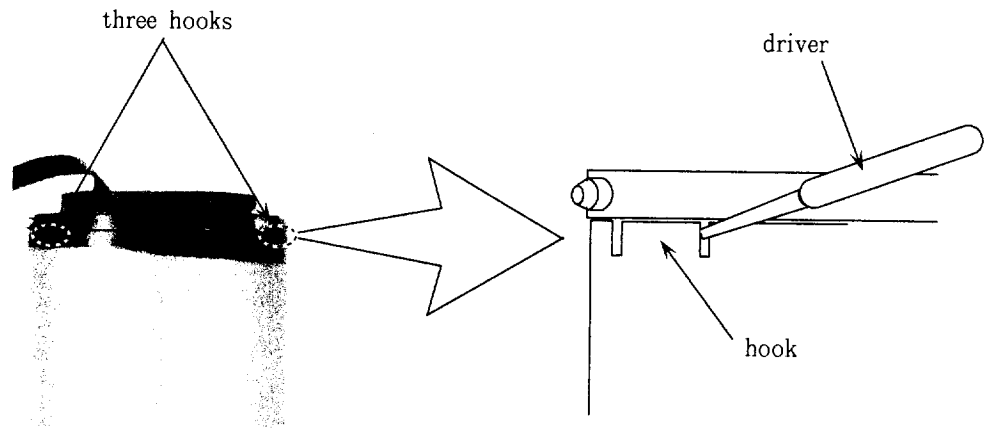


- ① As shown in the photo, hold a point somewhere on the lens housing by tweezers. Then, rotate the lens chamber to the reset position.
- ② Press the lens chamber from the front side by finger(s) and then remove the lens chamber from the cam ring large unit B602.

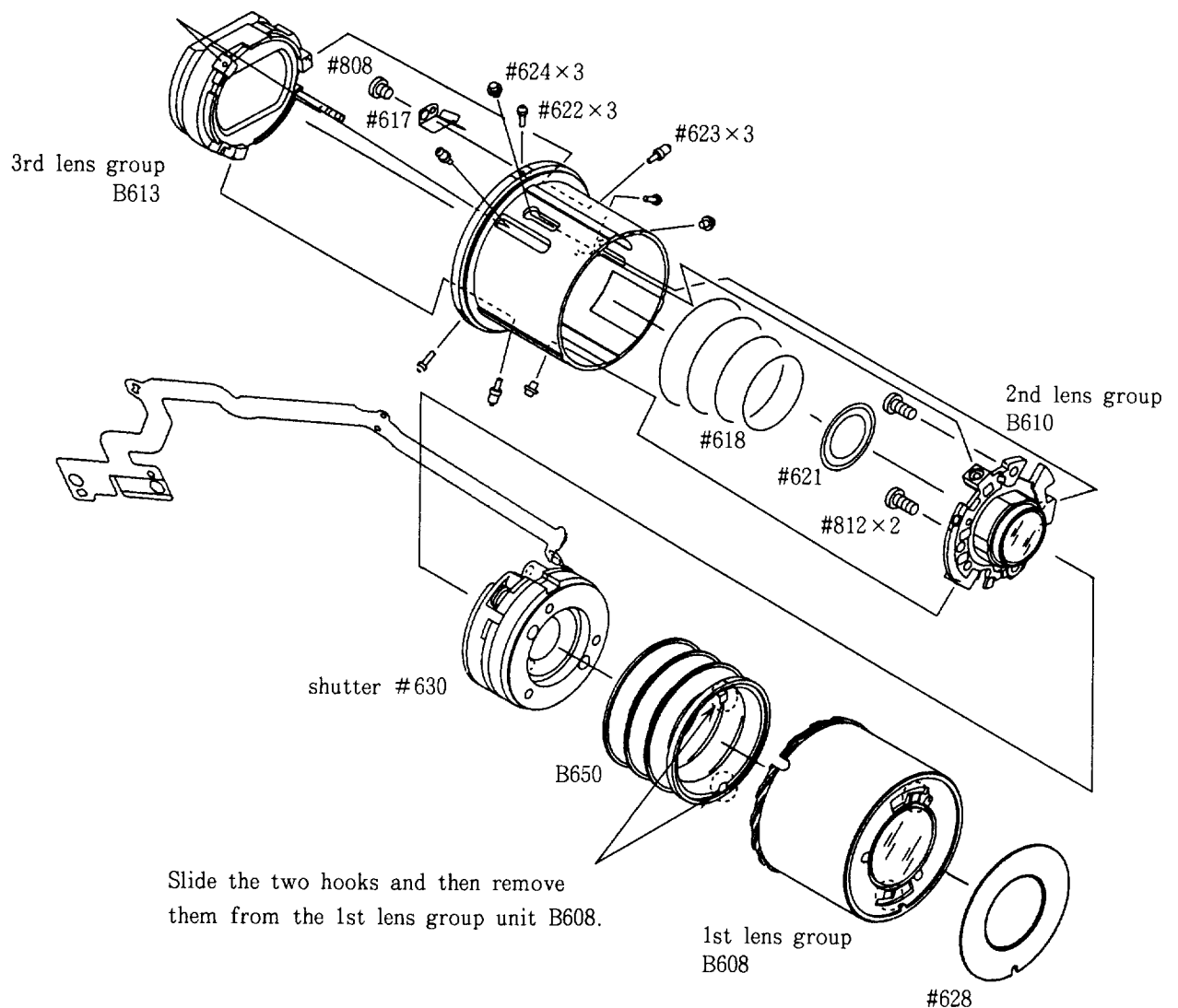


CAM RING UNIT - SMALL

- Using the driver No. 1 or 2, raise the three hooks on the exterior of cam ring small unit B606. Then, remove the lens chamber from the cam ring small unit B606.



1st LENS GROUP, 2nd LENS GROUP, 3rd LENSES GROUP, SHUTTER UNIT



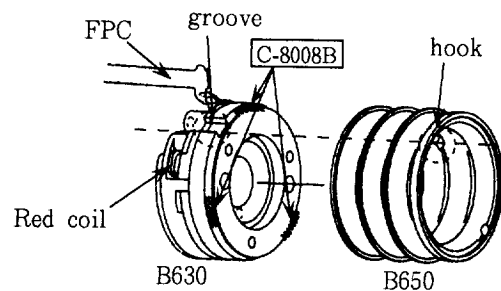
Slide the two hooks and then remove them from the 1st lens group unit B608.

ASSEMBLY • ADJUSTMENT

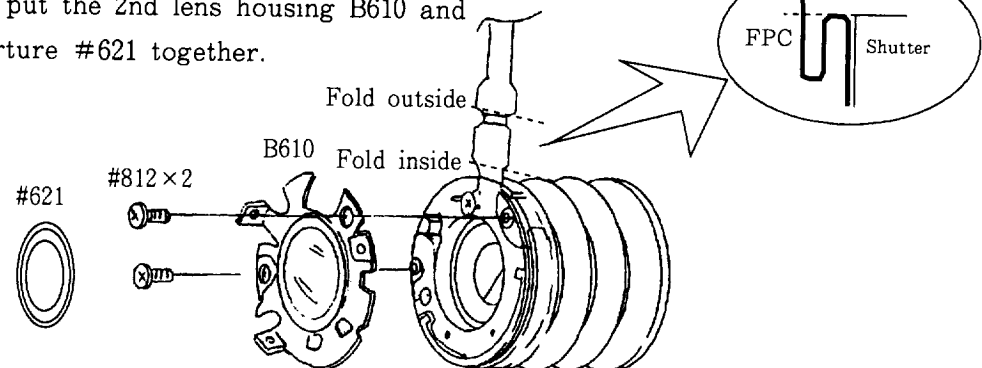
1. LENS BARREL

SHUTTER, 2nd LENS GROUP UNIT

- A position to attach the bellows rubber

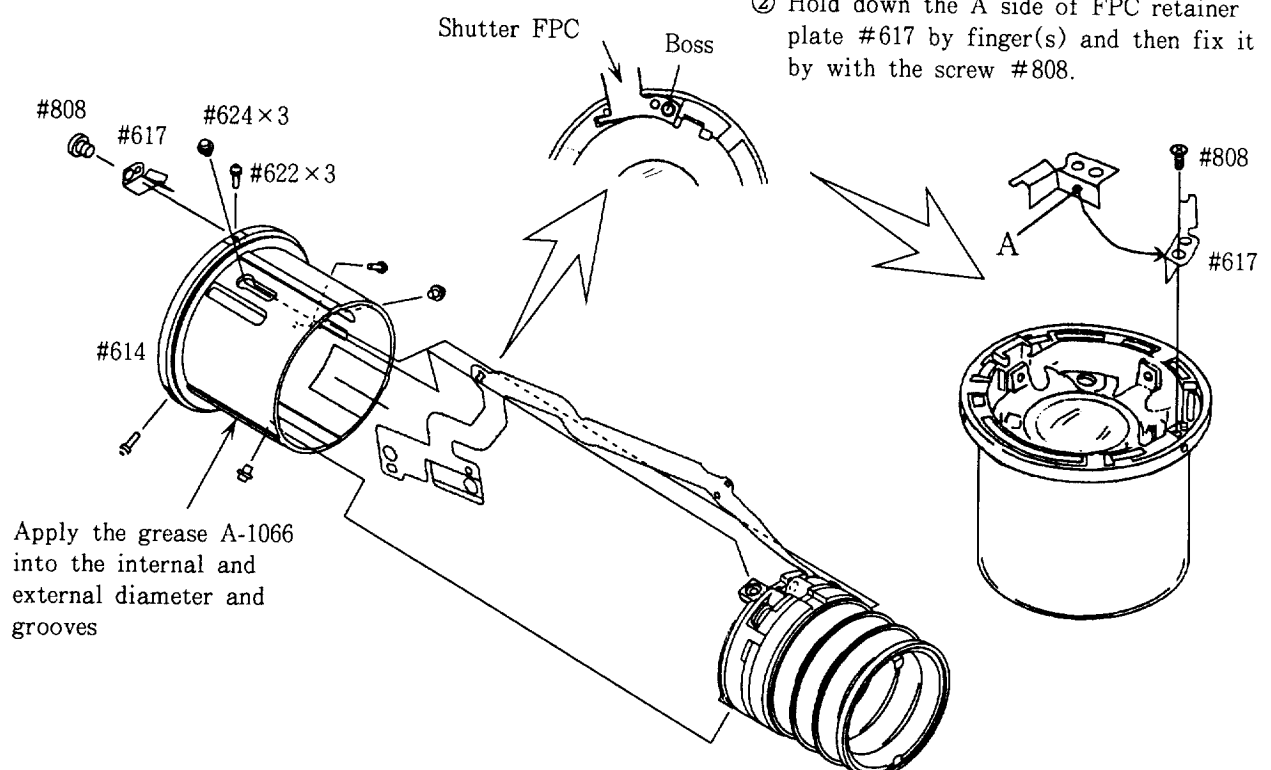


- Mount and put the 2nd lens housing B610 and the G4 aperture #621 together.



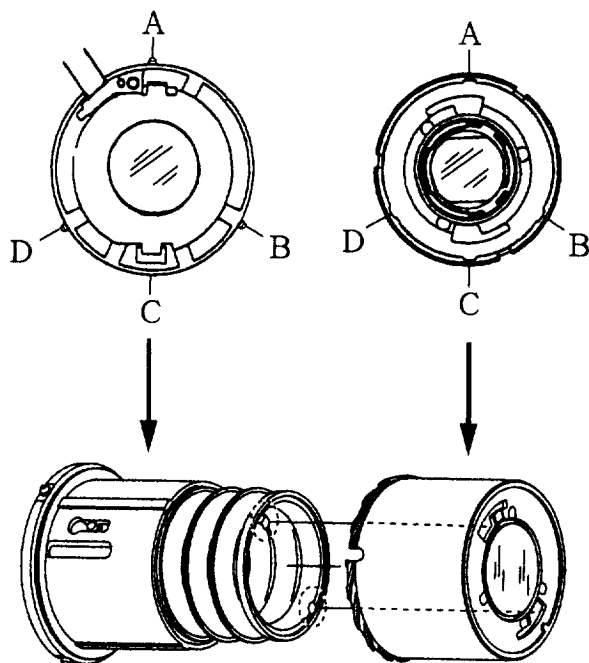
2nd GROUP MOVE RING

- ① Pass the shutter FPC through the inside of 2nd group move ring #614 and then fit the 2nd group move ring's boss in a hole on the FPC.
- ② Hold down the A side of FPC retainer plate #617 by finger(s) and then fix it by with the screw #808.



1st LENS GROUP UNIT

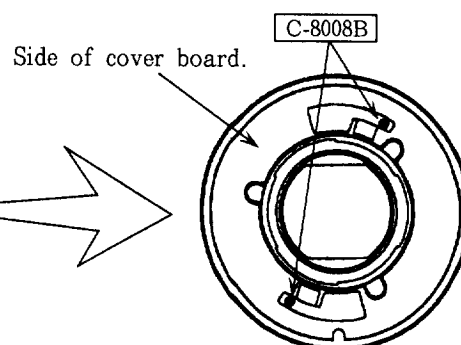
Reverse of 2nd G, move ring and 1st lens G,



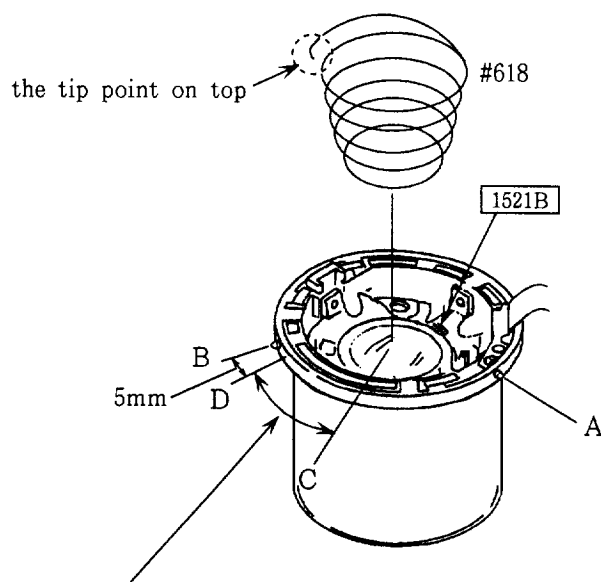
① Mount in order of A, B, C and D.

② fix the 1st lens group housing.
Slide the two hooks on the bellows ring and then hang them on the 1st lens housing.

Note : Be sure to apply the adhesive C-8008B within on the fixing side of cover board.



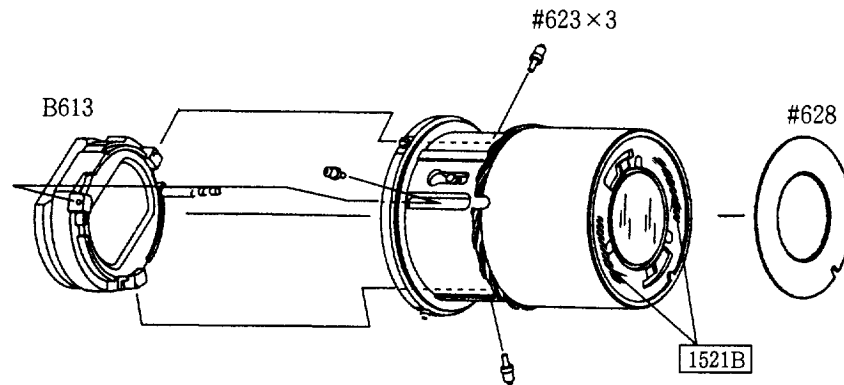
SPRING FOR 2nd AND 3rd LENS GROUP



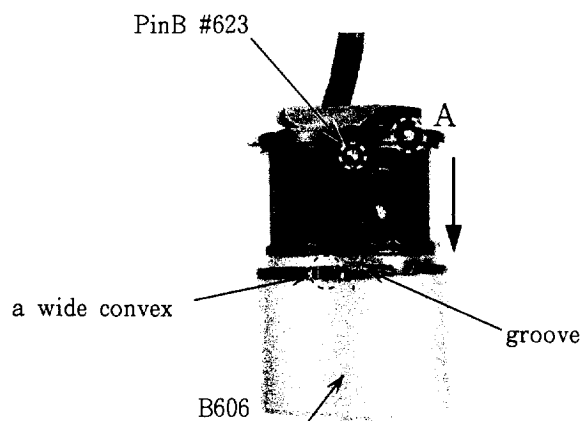
Be sure to place the top tip point of spring #618 within this area.

● Exactly the middle point between the pin A and the pin B shall be determined 'C'.

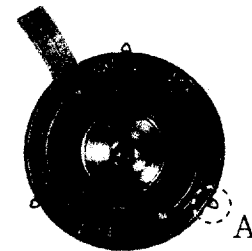
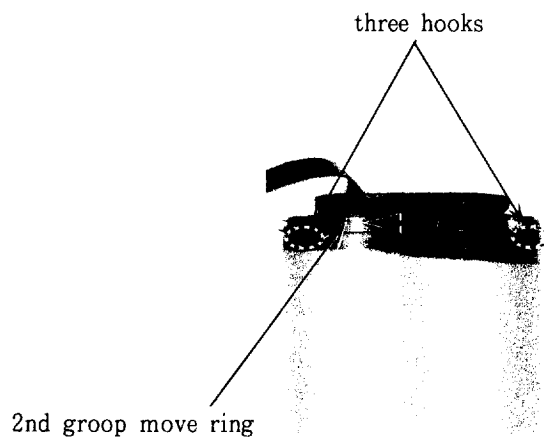
3rd LENS GROUP UNIT



CAM RING UNIT - SMALL



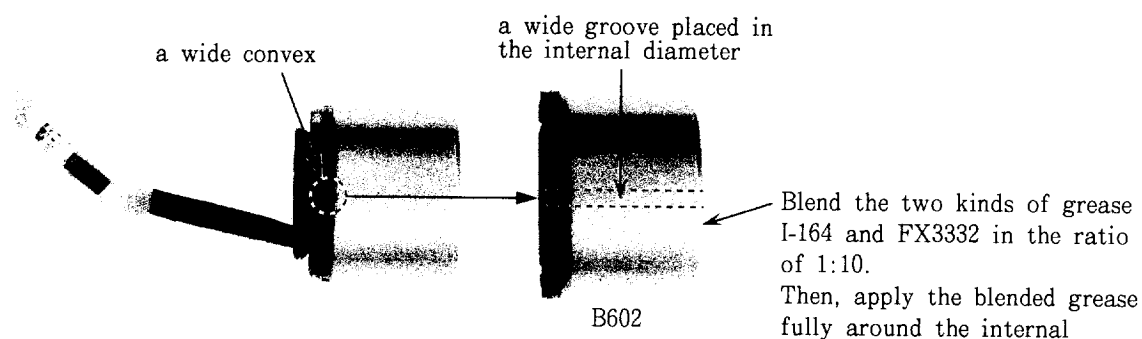
Blend the two kinds of grease I-164 and FX3332 in the ratio of 1:10.
Then, apply the blended grease fully around the internal diameter.



- ① Fit the pin B#623 in the groove as shown in the photo. Then, press the three hooks until they can catch the 2nd group move ring.
- ② Observe the reverse of 2nd group move ring and then rotate it clockwise to the end.

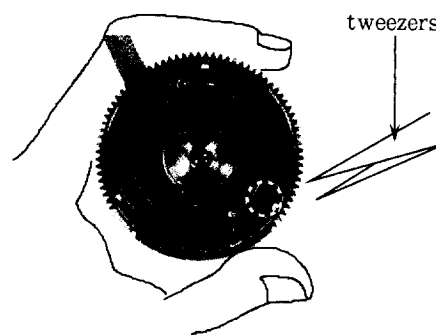
Note : Be sure that the 2nd group move ring is able to smoothly drive.

CAM RING UNIT - LARGE

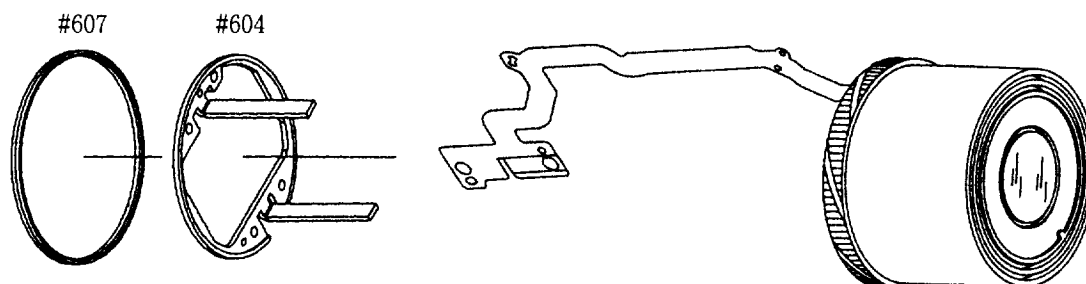


① Fit a wide convex of the cam ring unit B606 into a wide groove inside the cam ring unit B602 and then fix them together.

② As soon as the pin A#622 can be caught in the groove, as shown in the photo, pick up somewhere on the lens housing by tweezers. Then, rotate the lens housing in the arrow direction.

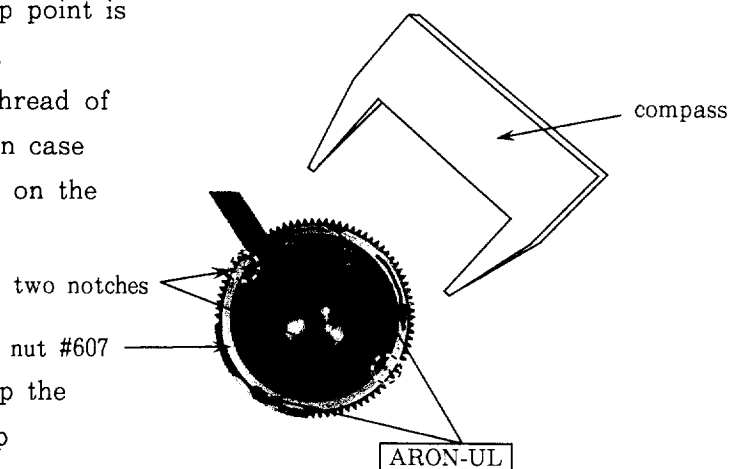


STRAIGHT KEY



● Tighten up the nut #607. Then, apply an adhesive to the two spots as shown in the photo by with anything whose tip point is sharp such as a toothpick or so.

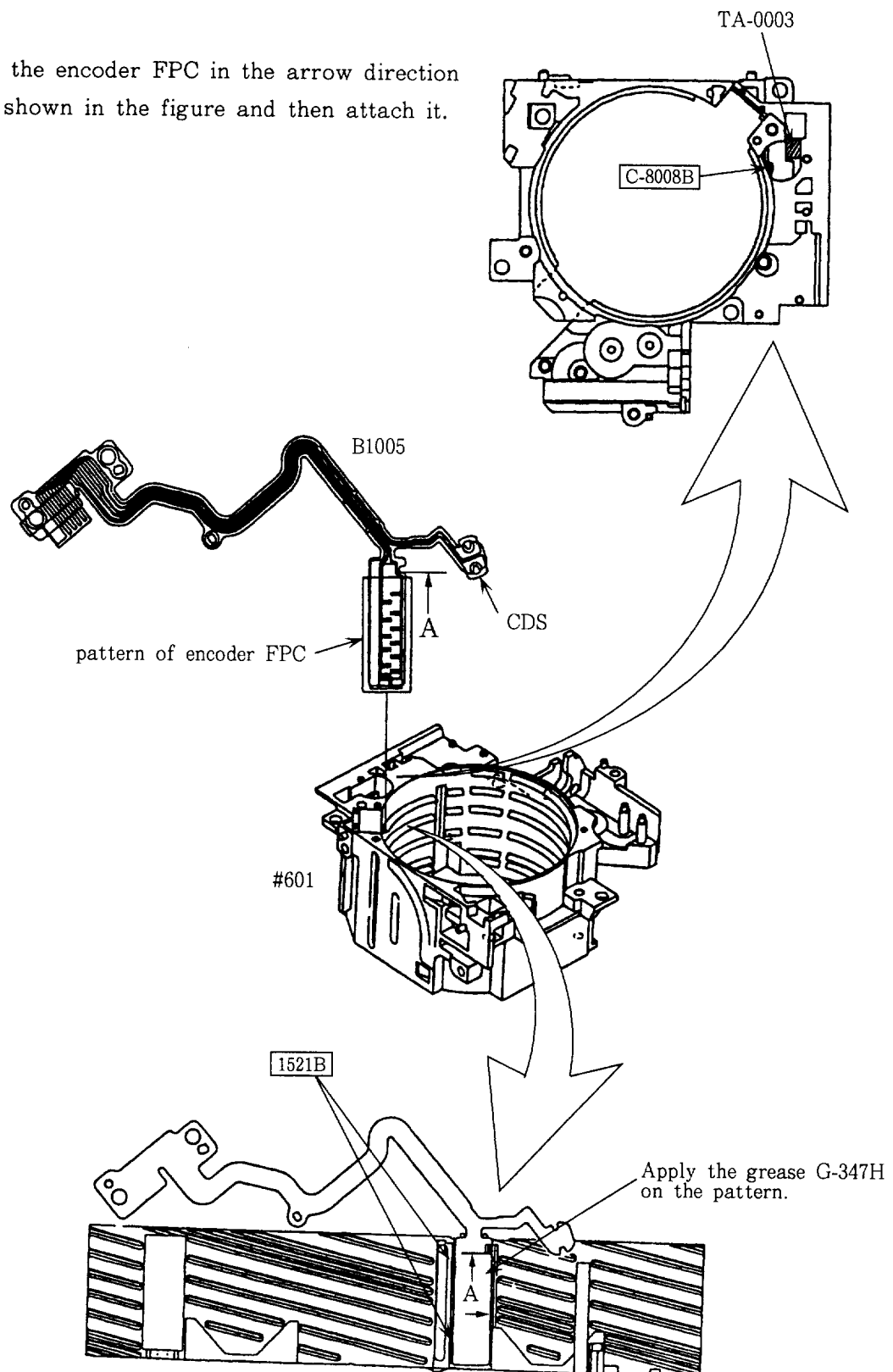
Note : Apply the adhesive to the thread of nut #607 fully. Then, just in case any extra adhesive remains on the surface, wipe it off.



Note : For the height to tighten up the straight key nut #607, stop tightening the nut on the same height to the top of the cam ring large unit.

ENCODER FPC UNIT, FIXED LENS BARREL

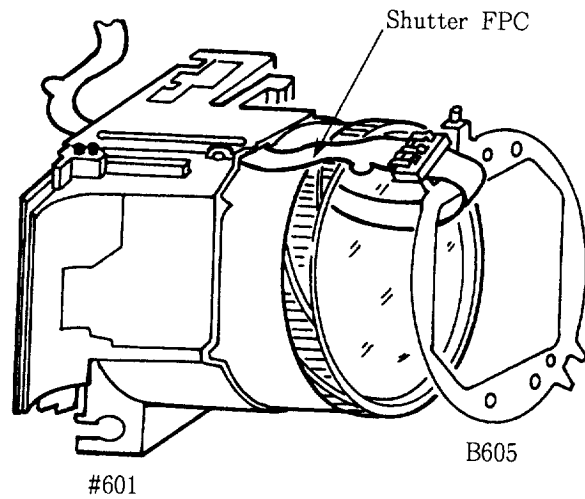
- Fit the encoder FPC in the arrow direction as shown in the figure and then attach it.



Note : Be sure to apply the adhesive in the length of 5 mm and within the pattern of encoder FPC.

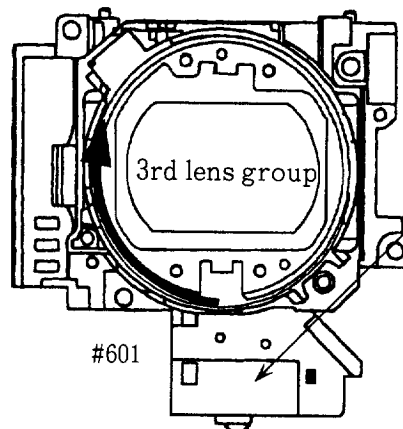
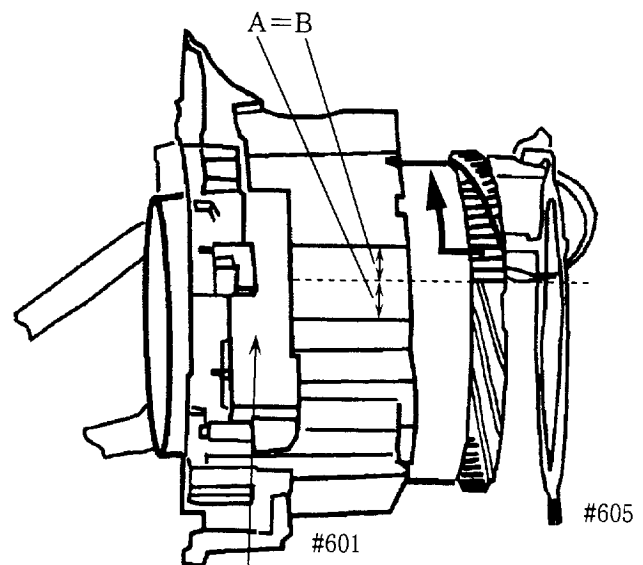
HOW TO MOUNT THE LENS GROUP FRAME ON THE FIXED LENS BARREL

- Pass the shutter FPC through the straight key base plate B605 and the fixed lens barrel #601.



- A position to fix the helicoid

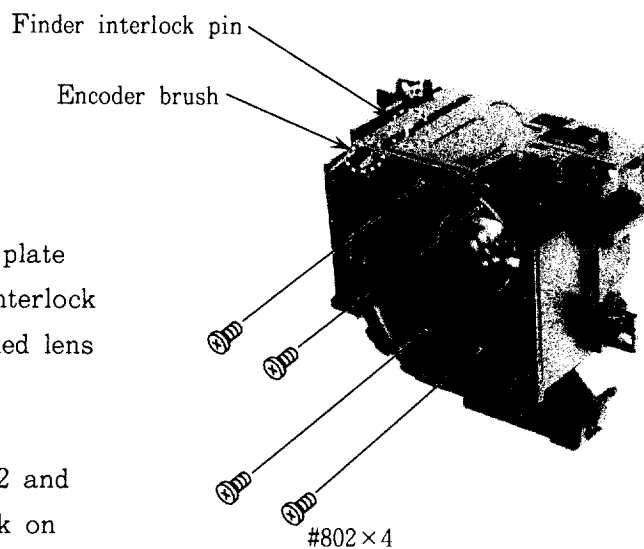
- ① Observe the reverse of helicoid. Then, fit the helicoid in the position as shown in the photo and rotate it clockwise to fix.
- ② Drive the 3rd lens group until its horizontal base line can be set horizontally straight.



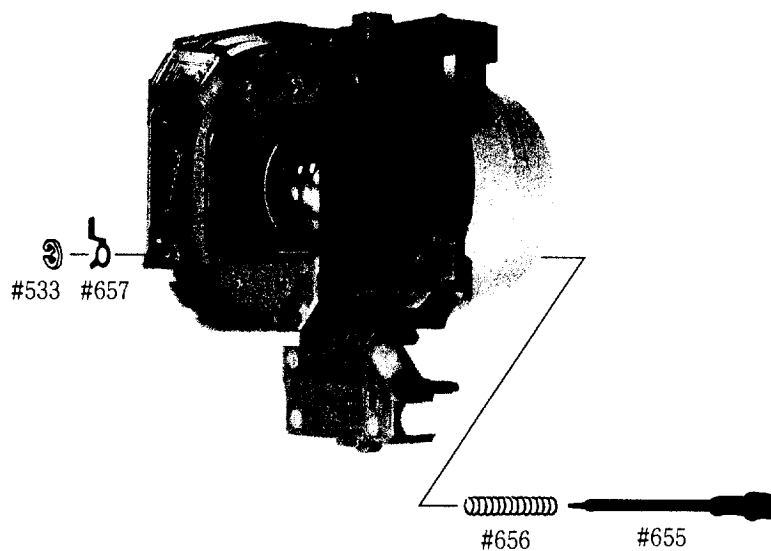
Gear base plate

STRAIGHT KEY BASE PLATE UNIT

- ① Fit the straight key base plate B605's brush and finder interlock pin into the groove on fixed lens barrel and then fix them.
- ② Tighten the 4 screws #802 and then apply the Screw Lock on each screw top.



ROCK BAR

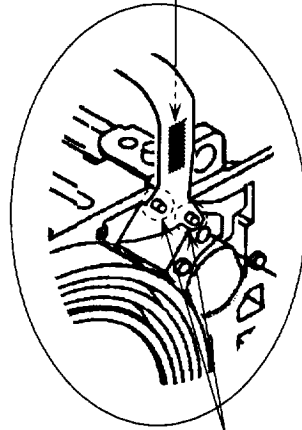


LENS BARREL MOTOR, FILM HOLDER SPRING UNIT

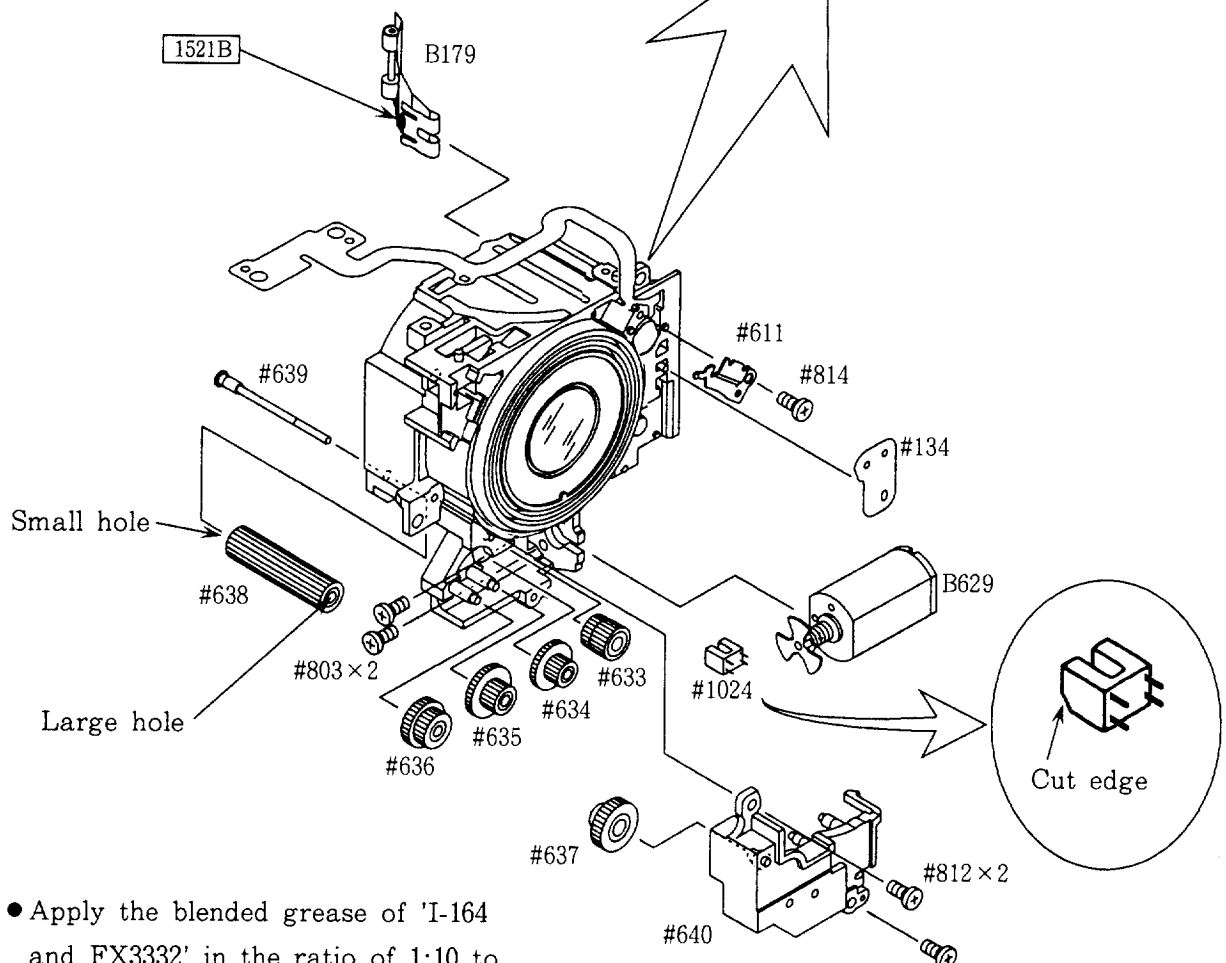
- The order to mount and fix each gear

- ① Mount and fix the gear #638 on to the shaft #639.
- ② Put each motor and gear in the fixed lens barrel #601 in the following order : motor B629 to gear #633 to gear #634 to gear #635 to gear #636
- ③ Inlay the gear #637 to the shaft of gear base plate cover #640.
- ④ Fix the unit assembled in the above onto the fixed lens barrel #601 by

Fit and adhere the shutter FPC and the encoder FPC by with a double-sided adhesive tape TA-0004.



Fit the fixed lens barrel's each guide pin in each shutter FPC's hole.

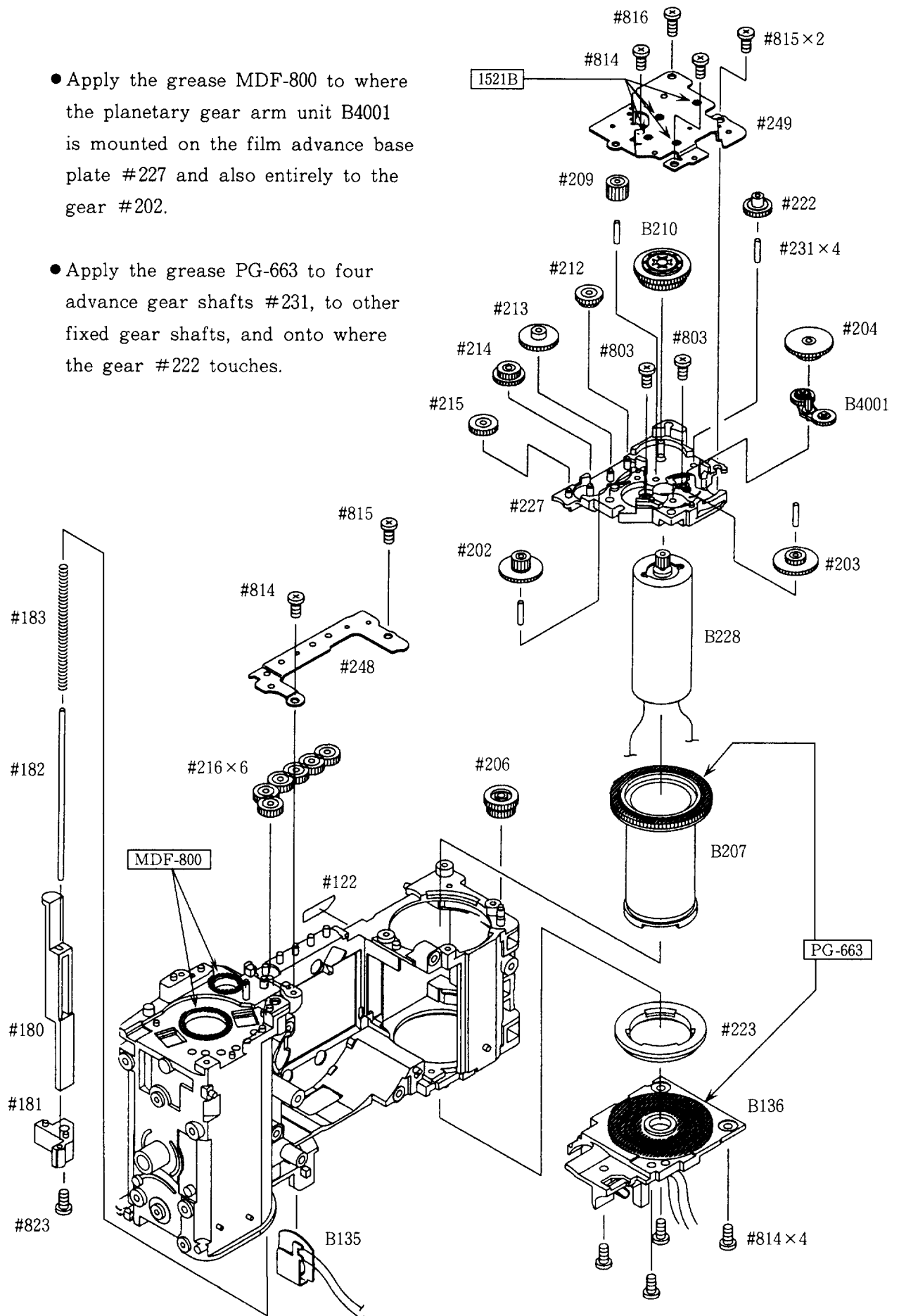


- Apply the blended grease of 'I-164 and FX3332' in the ratio of 1:10 to each gear and shaft for gear.

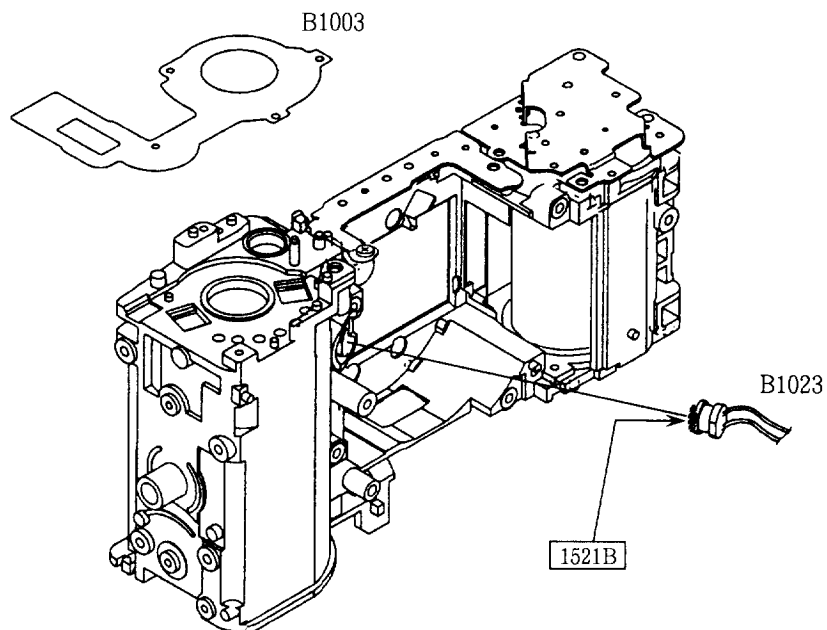
2. REAR BODY

FILM ADVANCE GEAR, SPOOL, SMALL PARTS FOR THE REAR BODY

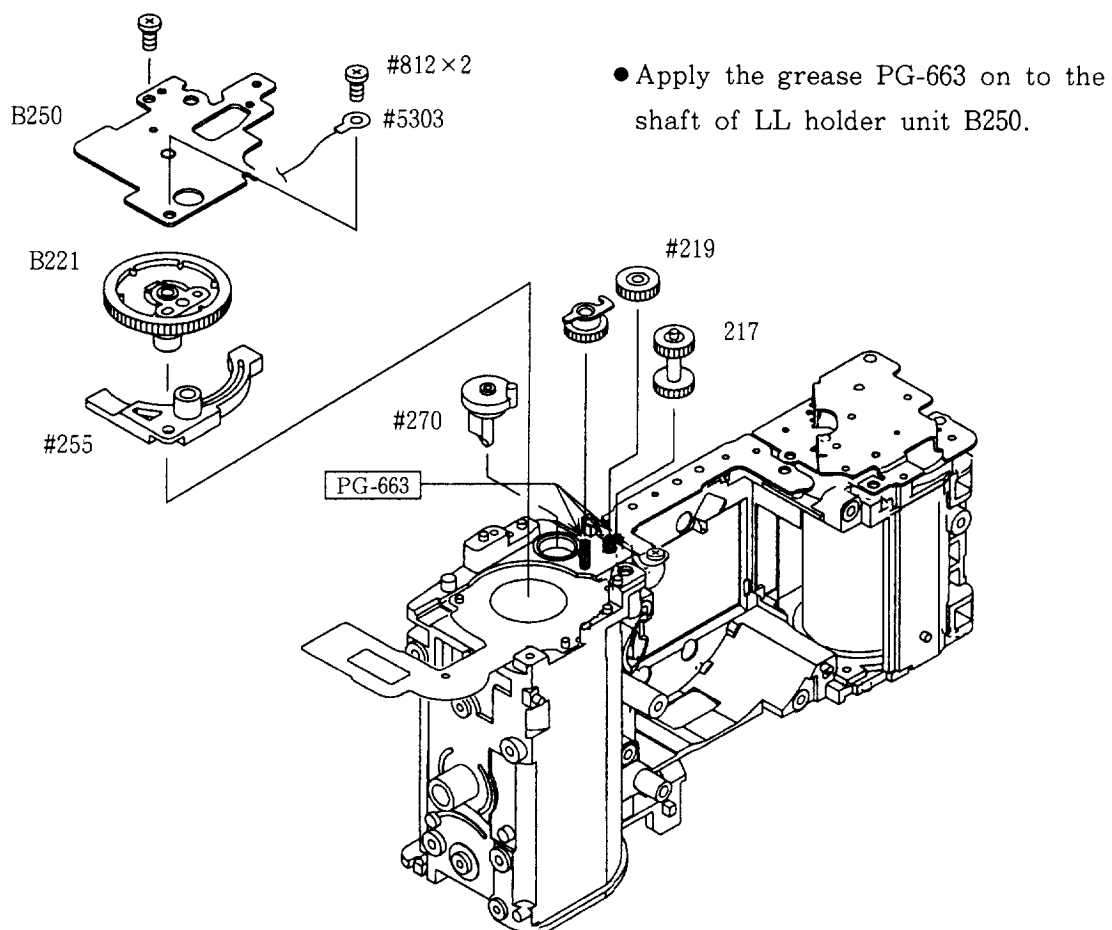
- Apply the grease MDF-800 to where the planetary gear arm unit B4001 is mounted on the film advance base plate #227 and also entirely to the gear #202.
- Apply the grease PG-663 to four advance gear shafts #231, to other fixed gear shafts, and onto where the gear #222 touches.



D/D SENSOR UNIT, INDUCTOR UNIT

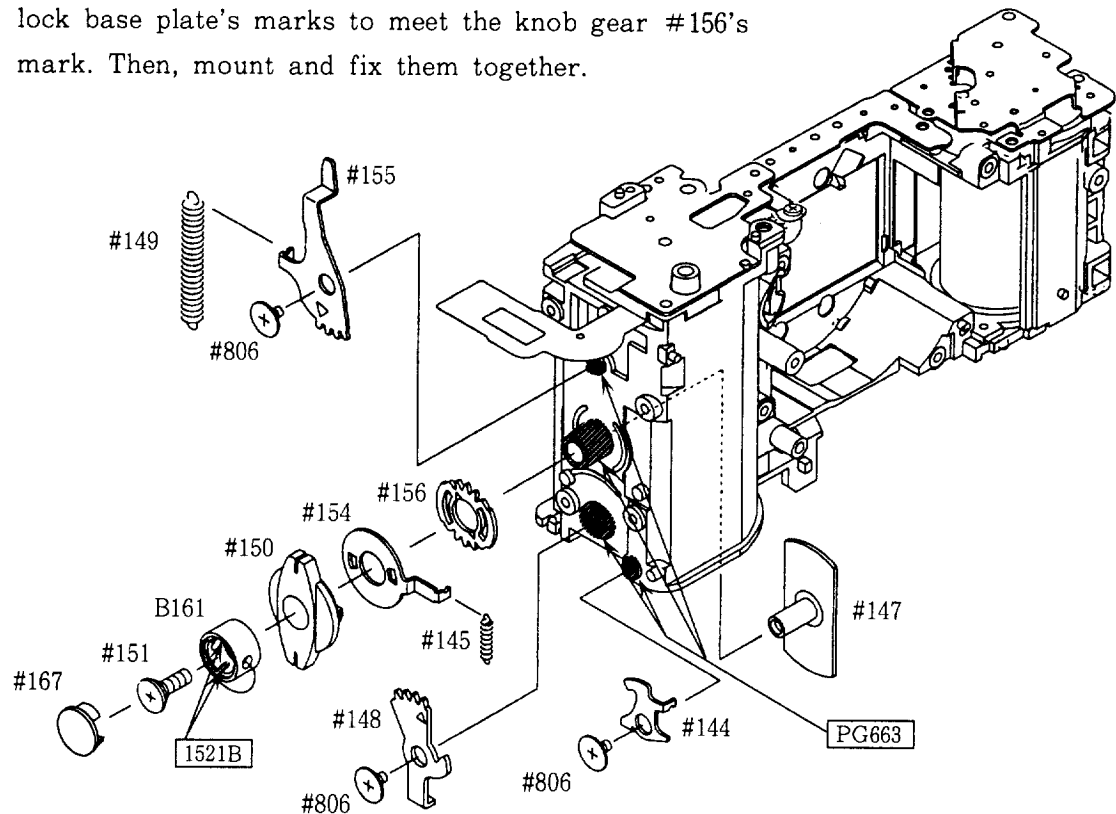


LLBASE PLATE UNIT



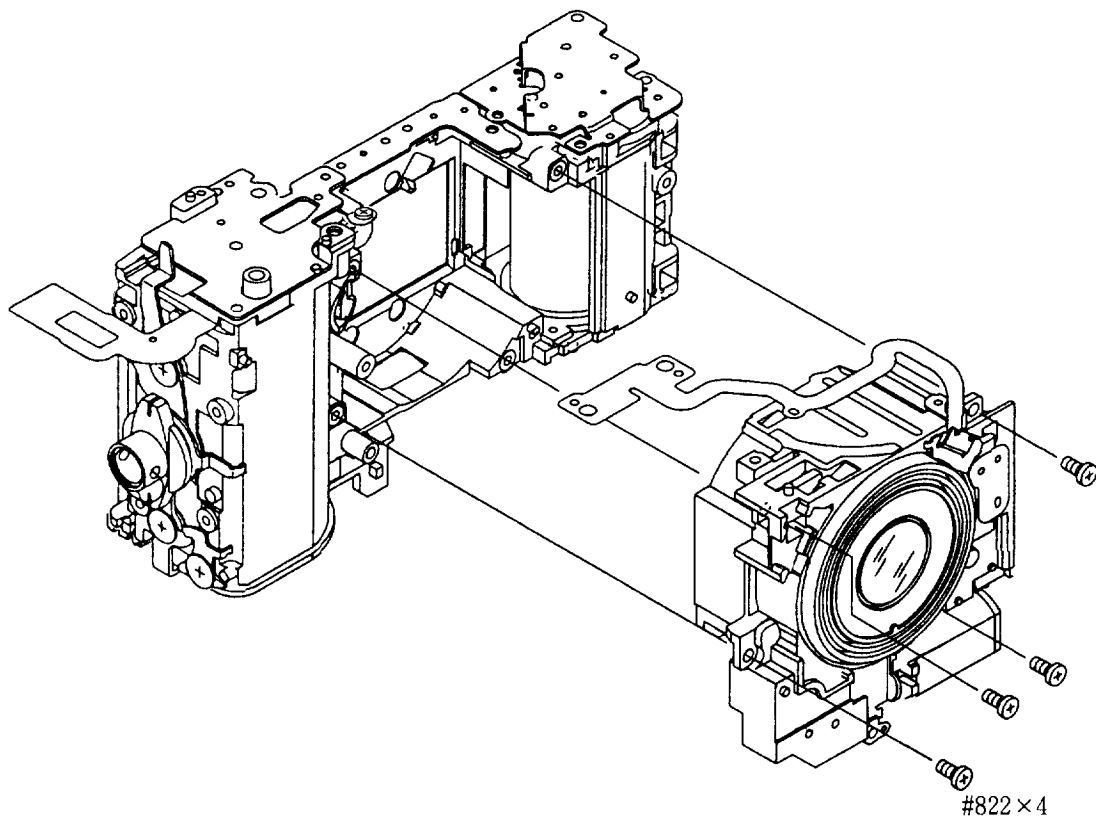
CARTRIDGE COVER LOCK BASE PLATE UNIT, EYELET

- Set both the coupling plate's and the cartridge cover lock base plate's marks to meet the knob gear #156's mark. Then, mount and fix them together.

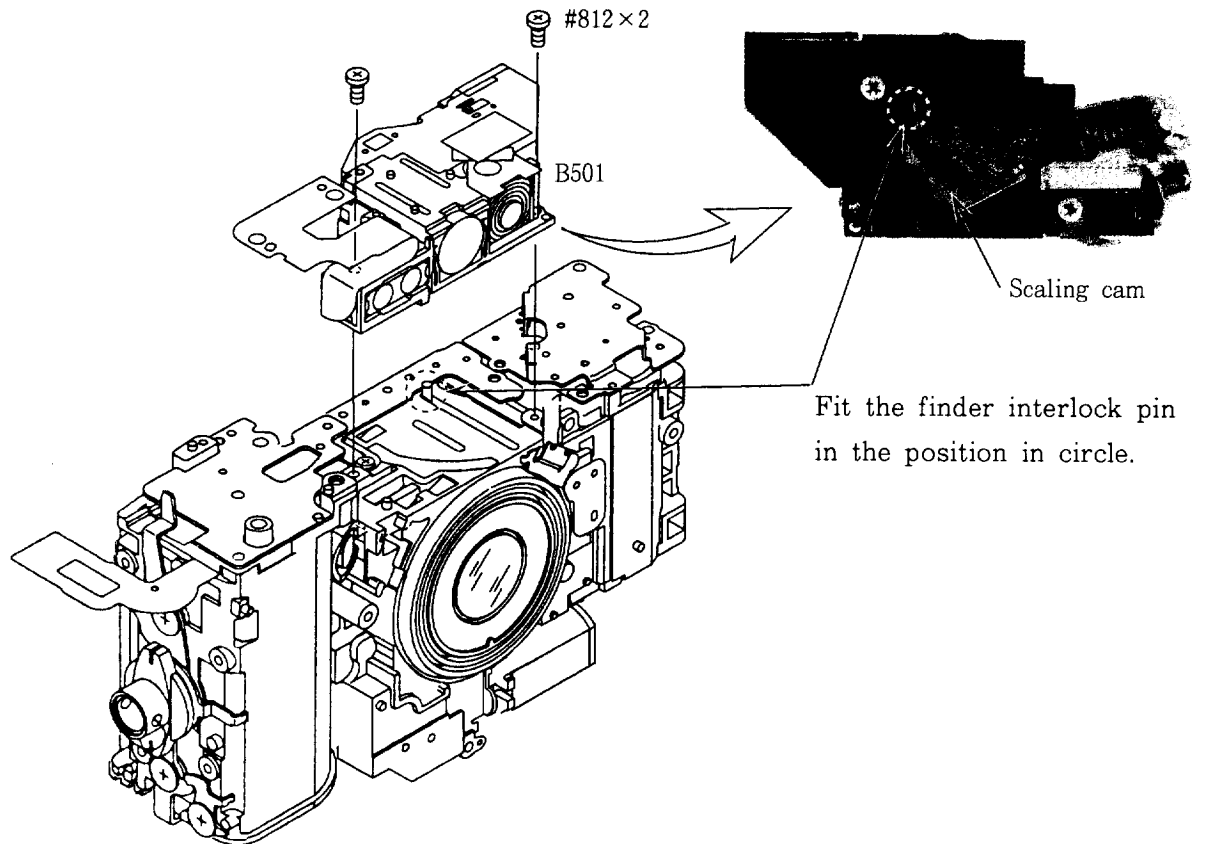


3. HOW TO MOUNT AND FIX THE REAR BODY AND THE LENS BARREL

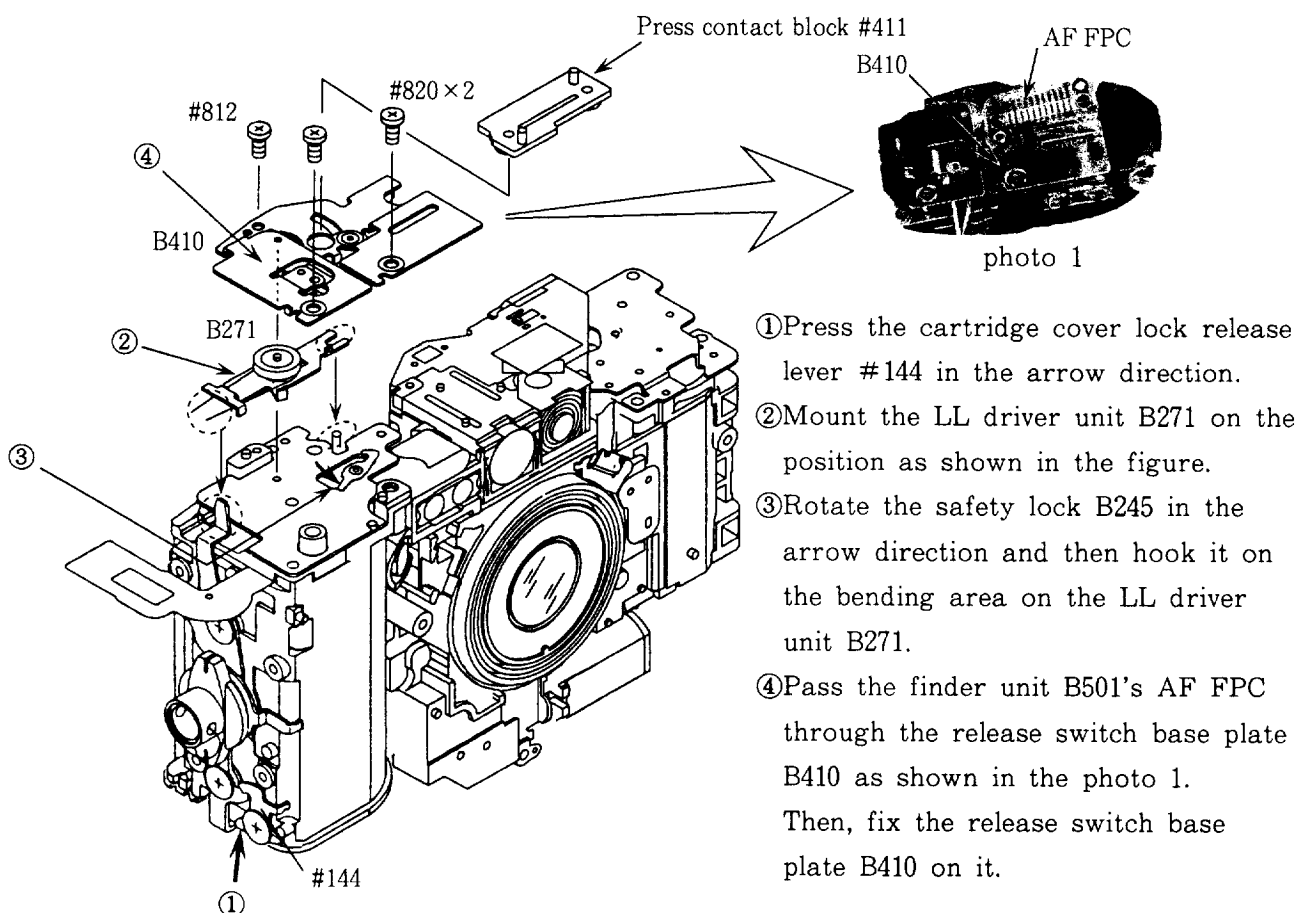
HOW TO ASSEMBLE THE LENS BARREL AND THE REAR BODY



FINDER UNIT

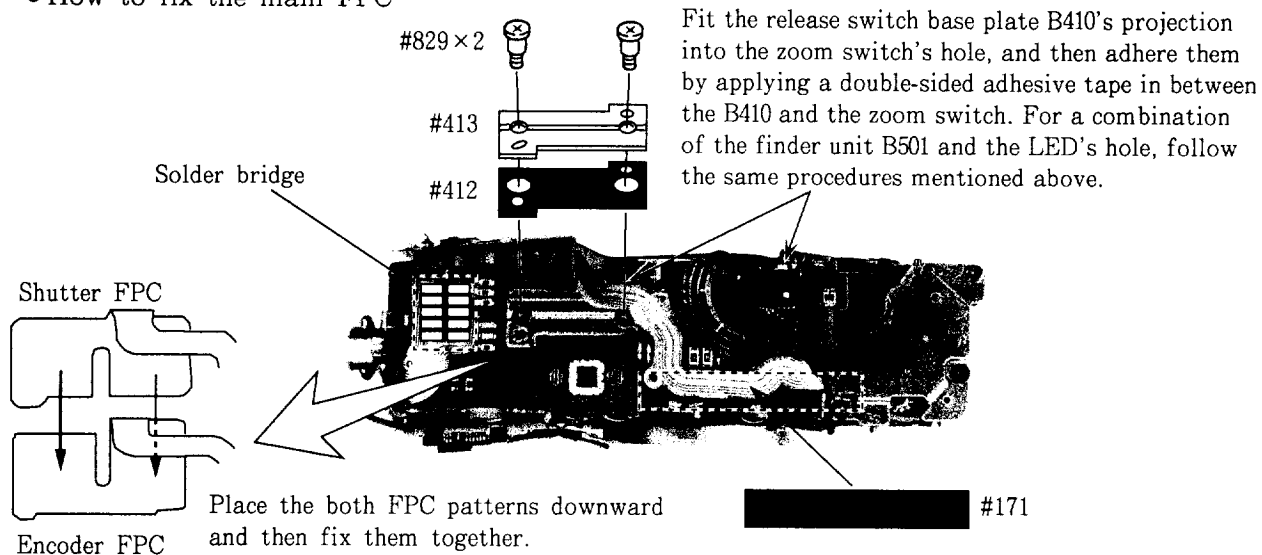


LL DRIVER UNIT, RELEASE SWITCH BASE PLATE UNIT



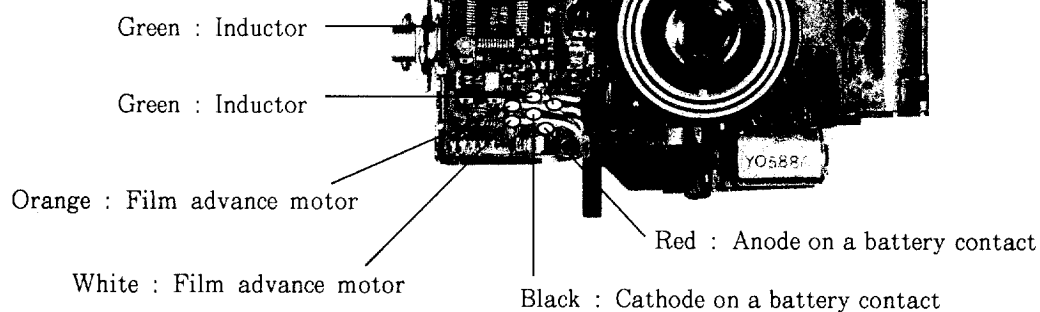
MAIN FPC UNIT

● How to fix the main FPC

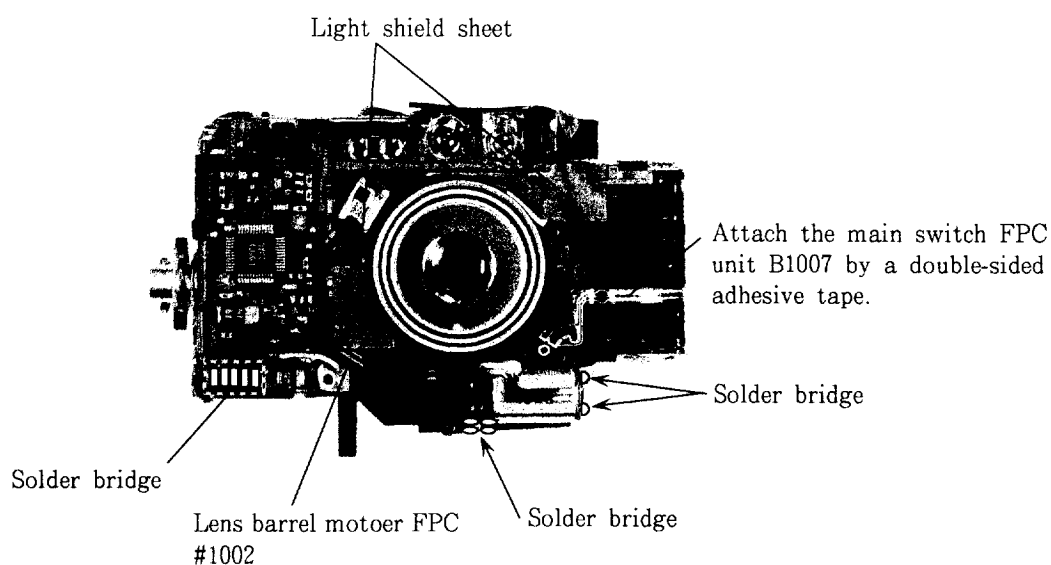


● Solder each lead wire.

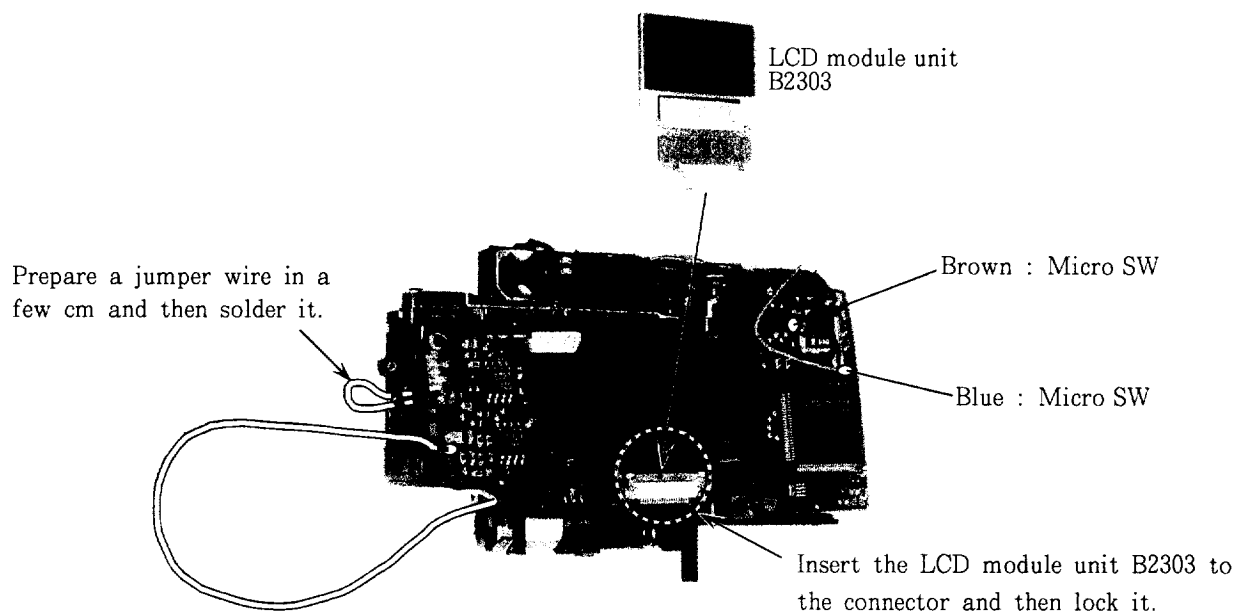
Fix the remote control sensor on the fixed lens barrel #601 by with a double-sided adhesive tape TA-0003.



● How to mount and fix / settle the lens barrel motor FPC, the main switch FPC and the light shield sheet



LCD MODULE UNIT, PREPARATION FOR INSPECTION AND ADJUSTMENT

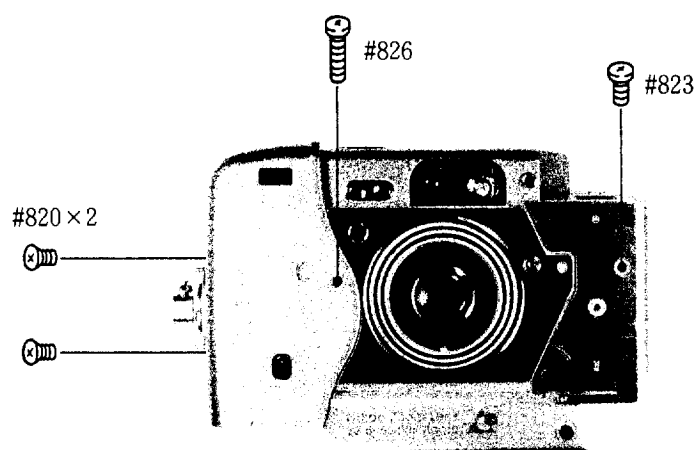


Remove the gray lead wire. Then, prepare another lead wire in the length of approximately 13 cm and solder it instead of the gray lead wire.

In addition, do not solder the yellow lead wire expanding from the battery's anode.

FRONT COVER UNIT

- Insert two curtains to the lens barrel and then mount and fix the front cover unit B108.



4. INSPECTION AND ADJUSTMENT

CHECK ON THE OPERATION MODE OF CAMERA

Caution : Just in case of any irregular operation mode observed on the camera, remove the loaded battery immediately.

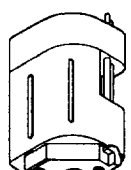
1. As soon as loading a battery into the camera, the motor should work.
2. After completion of the above column 1, the lens barrel should extend from the original / reset position to the Wide position.
3. When shorting the pattern for the zoom switch, the lens barrel should zoom. Then, along with the motion of lens barrel, the finder's magnification should automatically shift and change.
4. When pressing the shutter release button, the shutter should be actually released.

- According to the items above, check the operation mode on camera. Then, follow the adjustment processes below.

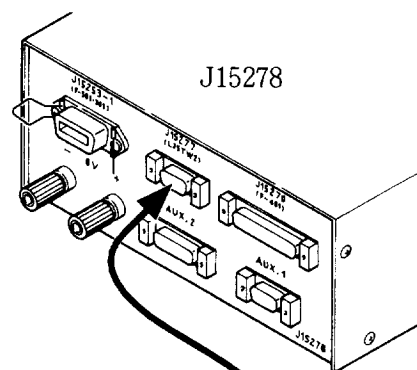
HOW TO CONNECT THE CAMERA WITH THE COMMUNICATION TOOL(s)



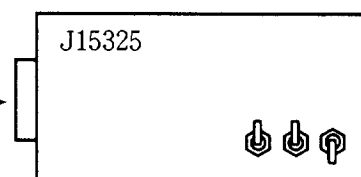
Note : For equipping the communication tool J-15348 with the camera, be sure to rotate the cartridge cover open/close knob in order to cancel the locked condition.



J-15348



J15278

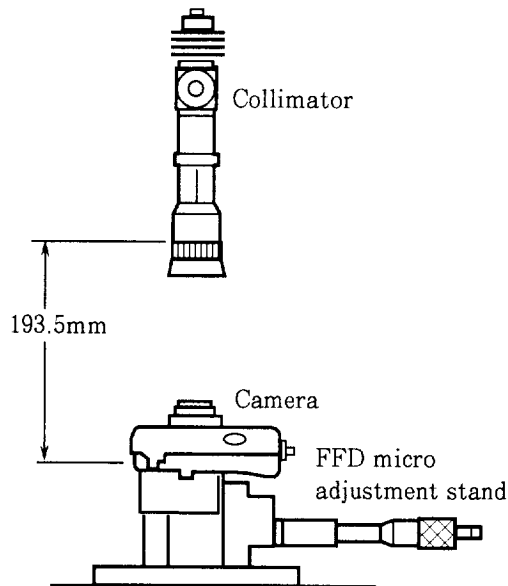


J15325

*Set the switch 1 to 'OLD'.

INSPECTION AND ADJUSTMENT OF BACK FOCUS

● Adjustment using a personal computer



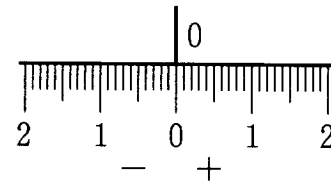
Zoom position	Standard (mm)
1 (WIDE end)	-0.05 ± 0.10
2	0 ± 0.11
3	0 ± 0.12
4	0 ± 0.11
5	0 ± 0.12
6 (TELE end)	-0.10 ± 0.12

● Inspection in manual inspection mode

- ① See the above-mentioned to set inspection tool.
- ② Set the camera to bulb and infinity focus (00h) in manual inspection mode (see page M5,6,7)
- ③ Read the micrometer indication of the FFD adjustment micro stand (J15327) and make sure it is within standard.

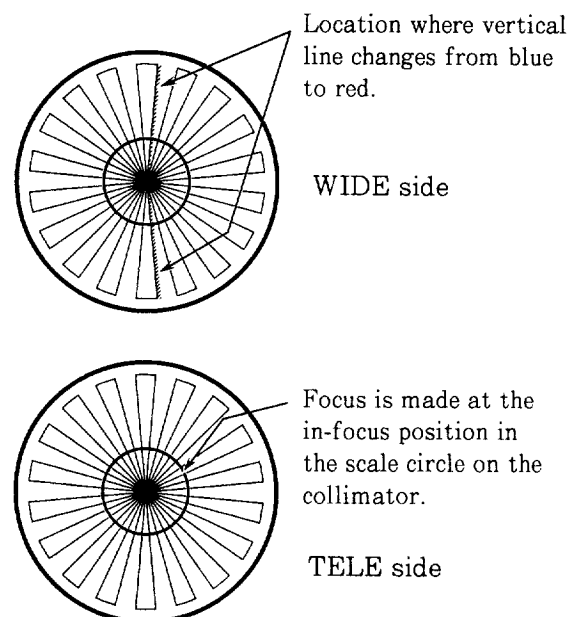
If the result is out of the standard range, be sure to perform inspection and adjustment using a personal computer.

- ① Rotate the objective lens of collimator (J19019) to set the scale to 0mm (0 calibration). Do not rotate the objective lens afterward.



- ② Set the display of the FFD adjustment micro stand (J15327) to "0.000". The setting method is the same as for a conventional FFD adjustment micro stand.
- ③ Run the inspection and adjustment software and connect between the camera and the personal computer.
- ④ Select "Back focus inspection and adjustment", and make each adjustment as indicated on the computer display

*Collimator focusing position



AE INSPECTION AND ADJUSTMENT

● Inspection and adjustment through PC operation

Perform the inspection and adjustment in accordance with what is instructed on the PC screen.

Precautions

1. Because the camera is automatically set to ISO 100 by the adjustment software, the shutter tester should be set to ISO 100 as well.
2. Since the brightness of LV13 is needed for adjustment, set the brightness LV12 to the value K 1.64(17.68) on the shutter tester EF 8000. In addition, for any brightness other than LV13, set the value K to 1.16(12.50).
3. Even after changing the value K, if the luminance does not change for the shutter tester, such a tester shall be prohibited for actual use.

● Inspection in the manual inspection mode

Set the ISO 100 in the manual inspection mode.(Refer to page M 5 , 6 , 7)

If not in the inspection mode, the ISO is usually set up to 200 automatically.

Check the AE by with the shutter tester.

In the out-of-criteria case, make sure to perform its inspection and adjustment through PC.

Standard : $0 \pm 1.5\text{EV}$

AF INSPECTION AND ADJUSTMENT

● Inspection and adjustment through PC operation

According to what PC says on the screen, perform adjustment and inspection on the AF's accuracy.

● Inspection in the manual inspection mode

1. Set up to the AF result display mode in the manual inspection mode.(Refer to page M 5 , 6 , 7)
2. Confirm whether or not the AF step is within its criteria in the specified range.(Refer to page M 9)

In the out-of-criteria case, make sure to perform its inspection and adjustment through PC.

ADJUSTMENT FOR SETTING DELAY TIME IN THE SHUTTER MECHANISM

● For replacement of the shutter mechanism unit or the mainFPC unit, be sure to adjust it.

Besides, after rewriting, conduct an inspection for AE.

1. Start up the inspection and adjustment software and then connect the camera with PC.
2. Follow the instructions on the PC screen for adjustment.

PARALLAX INSPECTION

- The parallax adjustment for this camera is already made in the finder unit B501. In this accord, in the out-of-criteria case detected after conducting the inspection below, check and adjust the looseness of prism stopper spring as shown in the photo 1, or replace the finder unit B501.

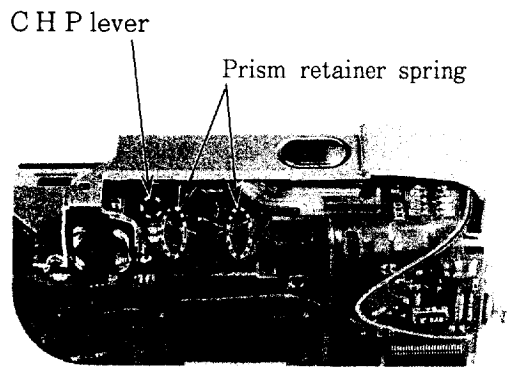
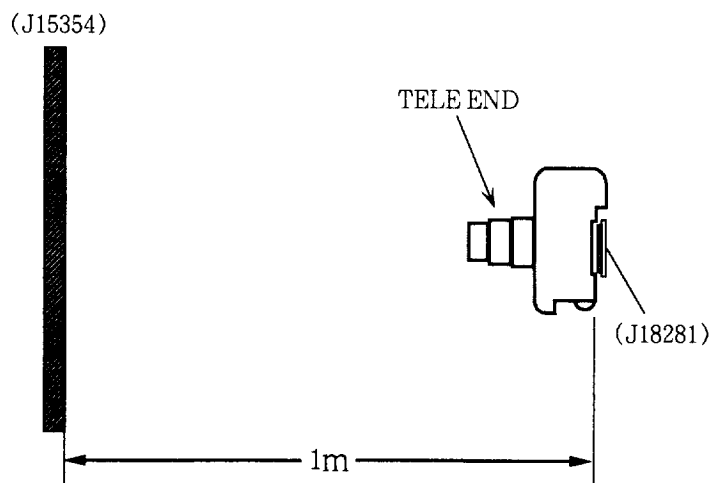
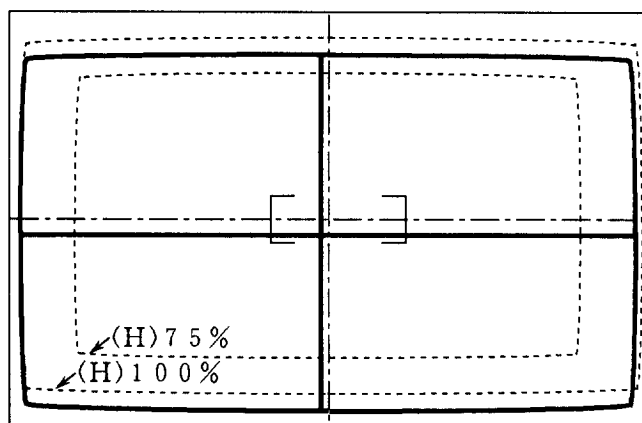


Photo 1,



Any lines other than the thick straight lines are entirely for the field of view from the finder.



(J15354)

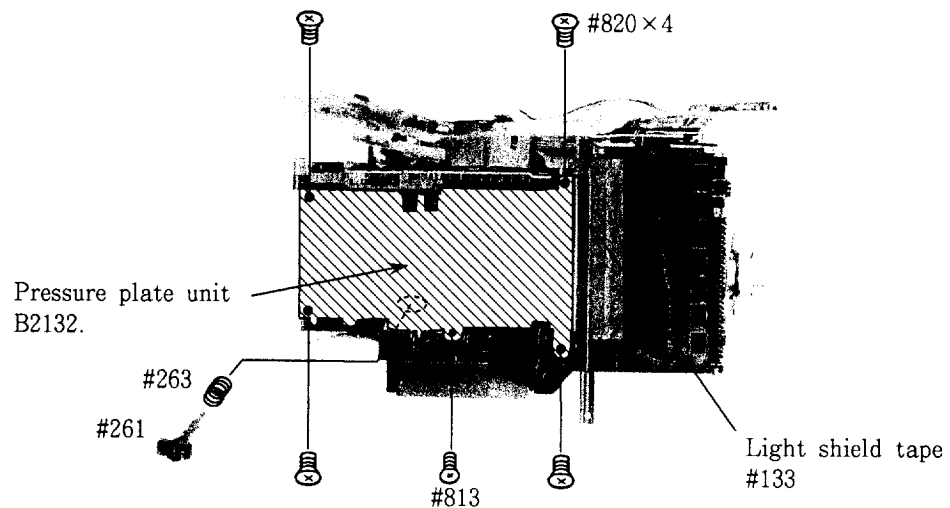
- ① Attach the focus glass J18281 on to the aperture surface of camera.
- ② As shown in the photo 1, set the CHP change-over lever to the H mode position by sliding the CHP change-over lever to the center of groove. Then, fix the shifted lever position by applying an adhesive tape.
- ③ Place the camera in front of the chart J15354 in accordance with the set distance. Then, set the lens barrel to the Tele-end position.
- ④ Select the bulb mode from the manual inspection mode. For more details, refer to the pages M5, M6 and M7.
- ⑤ In order to fit the cross of focus glass J18281 on to the thick cross of aperture surface, shift the camera's set-up position vertically and horizontally.
- ⑥ Check whether or not the finder's field of view does not go beyond the defined realm on the focus glass. If it is within the range, it shall be regarded pass.

Note : Due to 1 m as a distance to check, use the close distance compensation mark on the finder.

Standard : The finder's entire view field should be within the aperture surface.

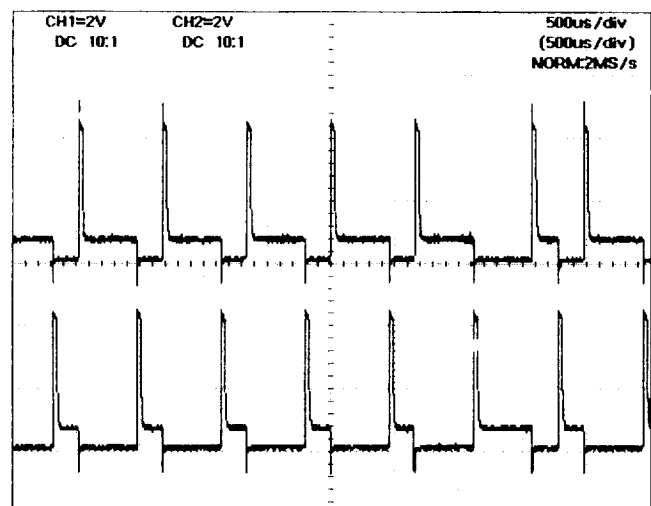
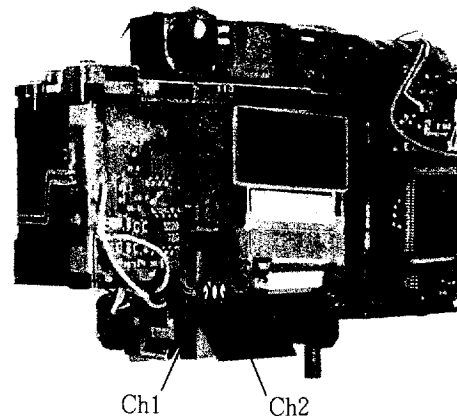
PRESSURE PLATE UNIT

- Put the spring #263 first and the pad #261 in the hole on the rear body. Then, mount and fix the pressure plate unit B2132.



INSPECTION FOR THE SIGNAL OUTPUT FOR MAGNETIC HEAD

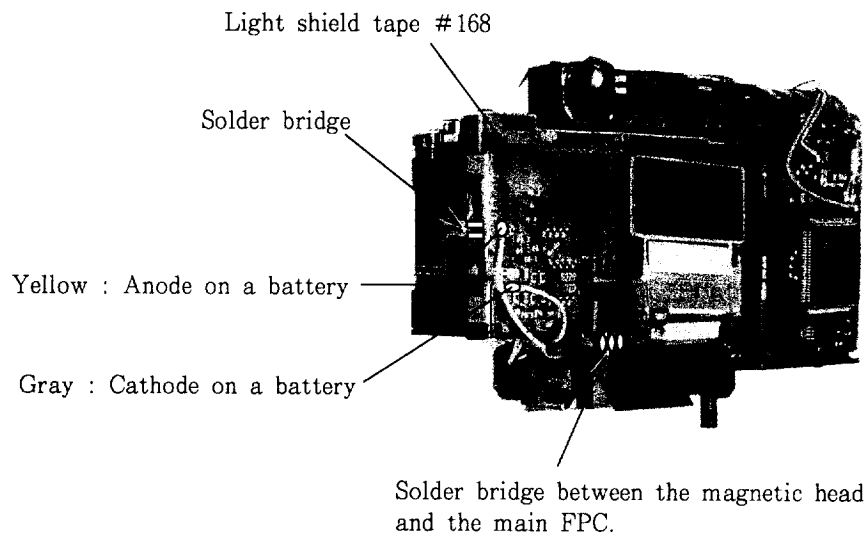
1. Load a test film into the camera. Then, close the cartridge cover and fix it by attaching an adhesive tape on to the camera.
2. Connect the oscilloscope's each probe with each soldered area as shown in the right figure. Then, connect the probe's GND with the cathode on battery.
3. When releasing the camera and advancing the loaded film, check whether the pulse shown in the right figure is output or not. If outputting the pulse, it shall be regarded pass.



SOLDER EACH LEAD WIRE

- Remove the two jumper wires once used for adjustment, and solder the gray lead wire on the battery contact.

Then, solder each lead wire and perform a solder bridge on each.

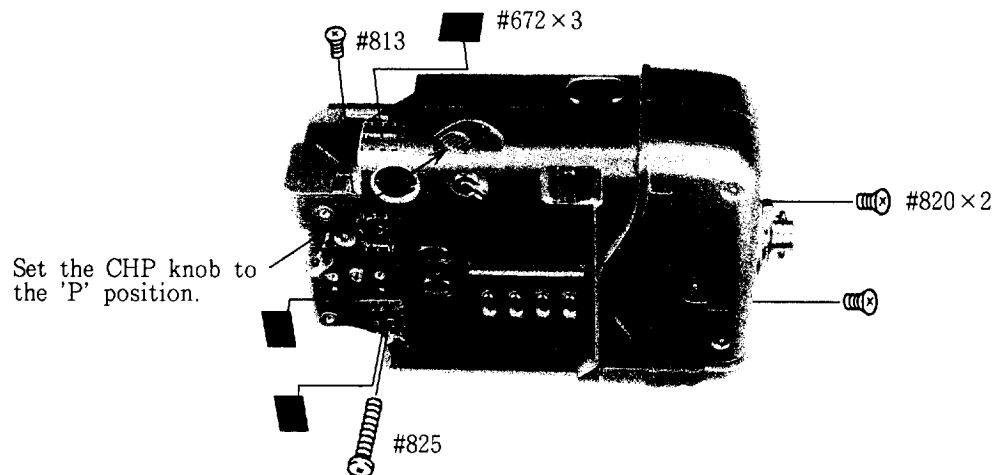


ANY CERTAIN ADJUSTMENT ITEM(s) TO BE REQUIRED WHEN REPLACING THE PARTS LISTED BELOW

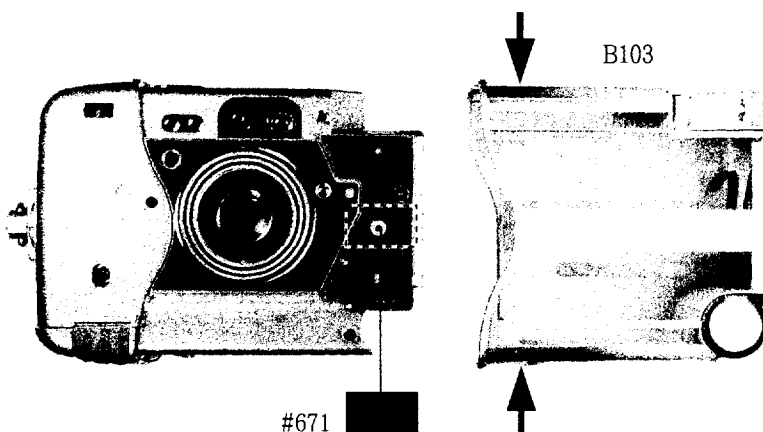
	Inspection and adjustment of backfocus	AE inspection and adjustment	AF inspection and adjustment	Delay time in the shutter mechanism
FINDER UNIT			○	
MAIN FPC	○	○	○	○
SHUTTER UNIT	○	○		○
LENS BARREL UNIT	○			
ENCODER FPC UNIT	○	○		

REAR COVER UNIT

- Set the CHP knob to the 'P' position. Then, keep to push up the cartridge chamber's eject lever and simultaneously mount and assemble the rear cover unit.

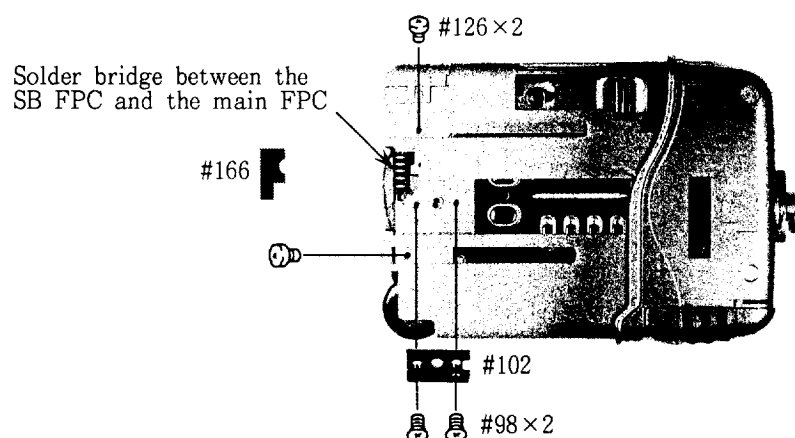


LINING COVER



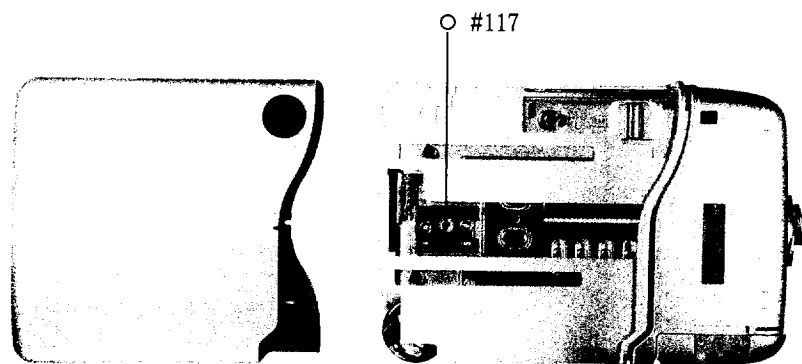
- Lightly press the lining cover B103 in the arrow direction to bend it ahead. While Keeping to bend the B103 ahead, slide and fix it.

- Perform a solder bridge and then attach the SB FPC cover #166 by with a tape #665.

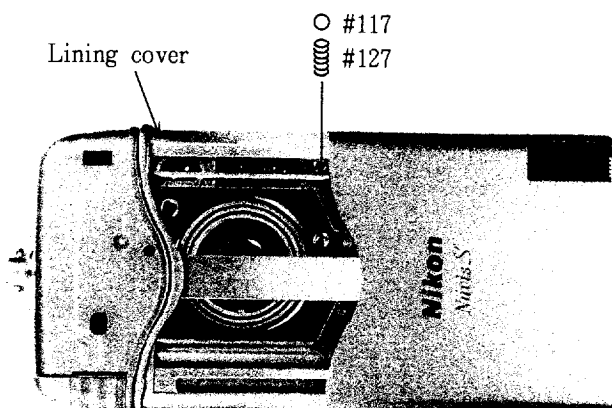


SLIDE COVER

- Place the click ball for slide cover #117.

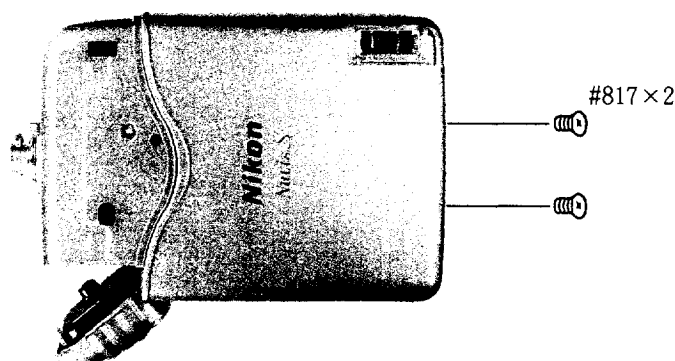


- Insert the slide cover until where is shown in the photo. Then, place the spring #127 and the click ball for slide cover #117.



- Completely slide the slide cover and then fix it by with 2 pieces of the screw #817.

△ The tightening torque for the screw #817 in 2 pieces is : 0.8 Kg / cm.
(Addition)

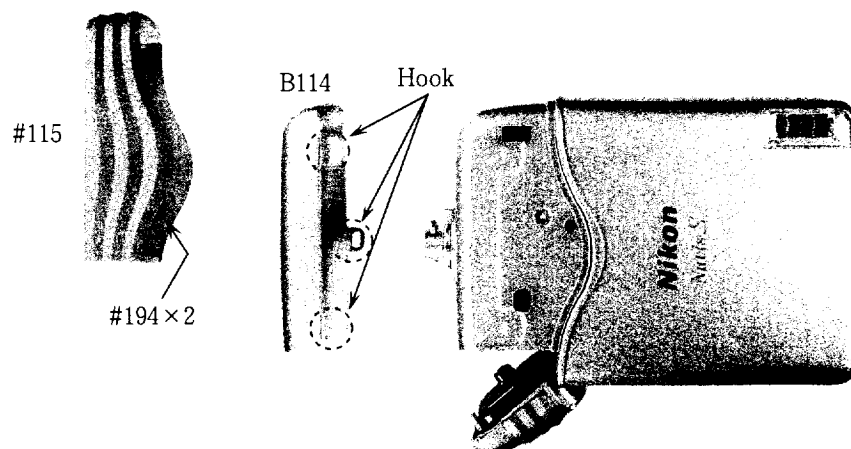


△ (Addition)

Note : The screw #817 in two pieces used for fixing the slide cover is the tapping screw.
In this accord, if disassembly and assembly is repeatedly made, the screw holes for screw #817 becomes enlarged and loosened, and consequently it causes the slide cover readily out of position. For its prevention, **be sure to replace the lining cover #103** then.

GRIP COVER

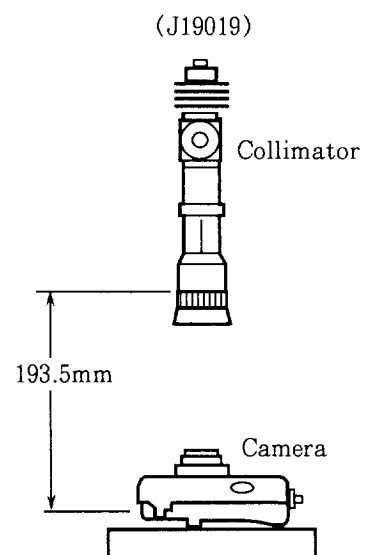
- Mount the grip cover and then attach the grip rubber.



INSPECTION AND ADJUSTMENT FOR THE BACK FOCUS AFTER ASSEMBLY

- For the inspection and adjustment through PC operation.
Due to the inspection and adjustment made by using a reflection from the pressure-plate, drive the objective lens on collimator J19019 and read the on-focus position.
- ① Start up the inspection and adjustment software and then connect the camera with PC.
 - ② Select the item of after-assembly back focus inspection and adjustment.
Then, follow the instructions on the PC screen for inspection and adjustment.

Zoom position	Standard
1 (WIDE end)	-132(-203 ~ -63)
2	-75(-134.5 ~ -16)
3	-55(-101 ~ -8)
4	-35(-62 ~ -7.5)
5	-22(-41 ~ -3)
6 (TELE end)	-22(-32.5 ~ ~~-2~~) $\triangle$ -11

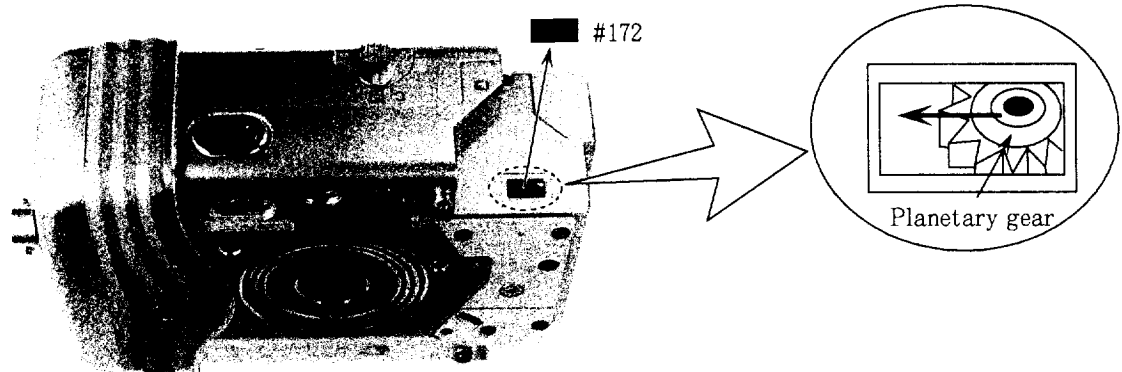


How to save a film in the case of rewind malfunction

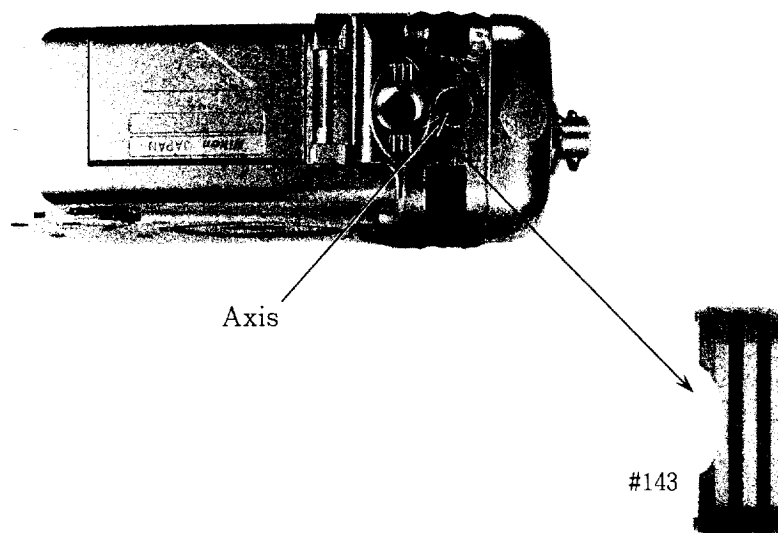
- In case the rewind function does not work even after advancing a loaded film, the following procedures shall apply for saving the film.

Caution : For the procedures, avoid to expose the film.

- ① Remove the slide cover. Then, peel off the light shield sheet #172 for saving the film, and shift the planetary gear in the arrow direction, which is seen from the hole.



- ② Peel off the cartridge cover rubber #143. Then, **push and rotate** the axis clockwise with a slotted screwdriver or so in order to rewind the loaded film.



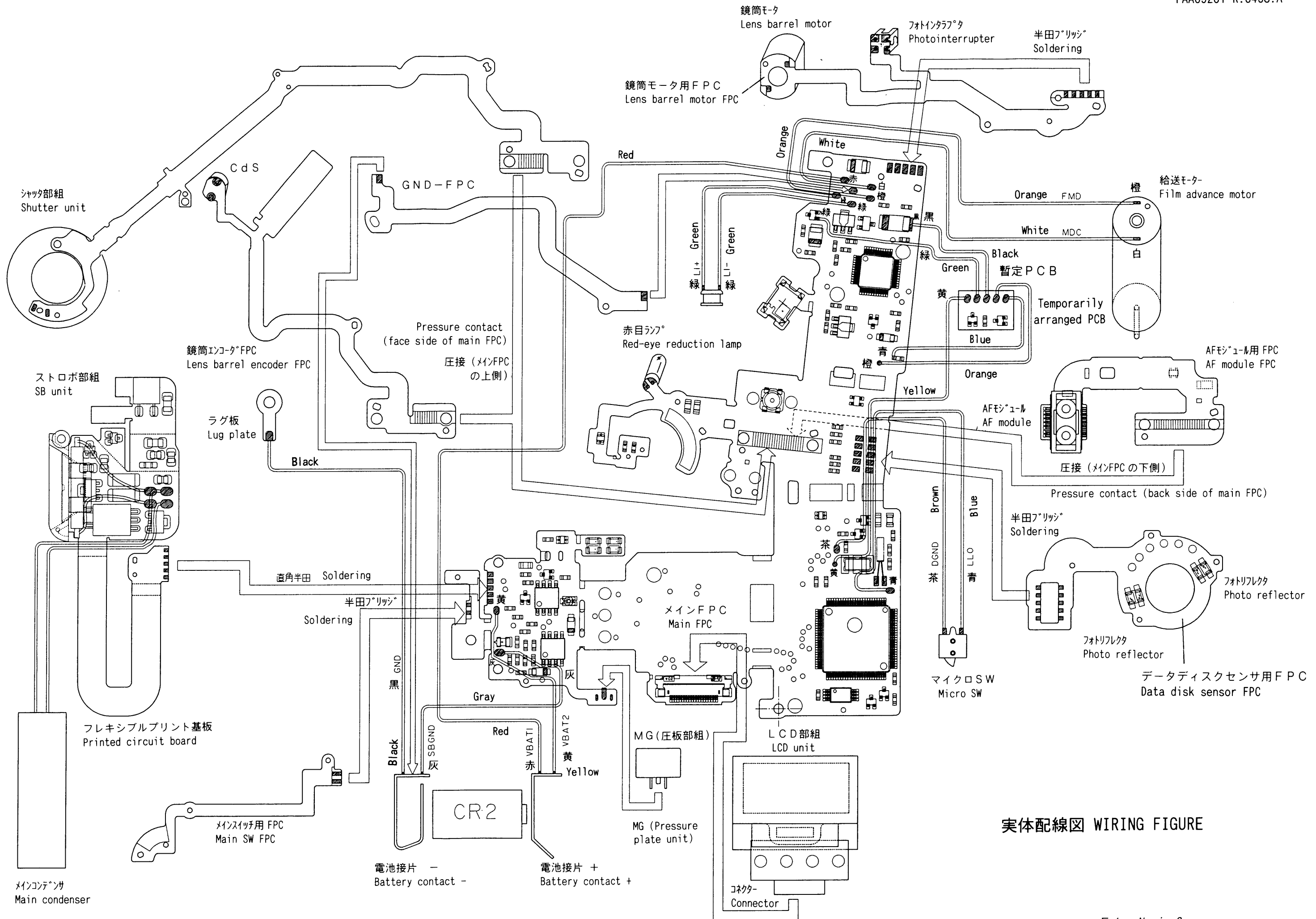
- ③ In case there is no problem with the safety lock mechanism after rewinding the film, the cartridge cover can be opened by with the open/close key for cartridge cover.

電気編目次

実体配線図	E 1
電気回路図	E 2
チェックランド図	E 3
パターン図	E 4
部品配置図	E 5
EEPROM DATA	E 6

ELECTRIC CIRCUIT

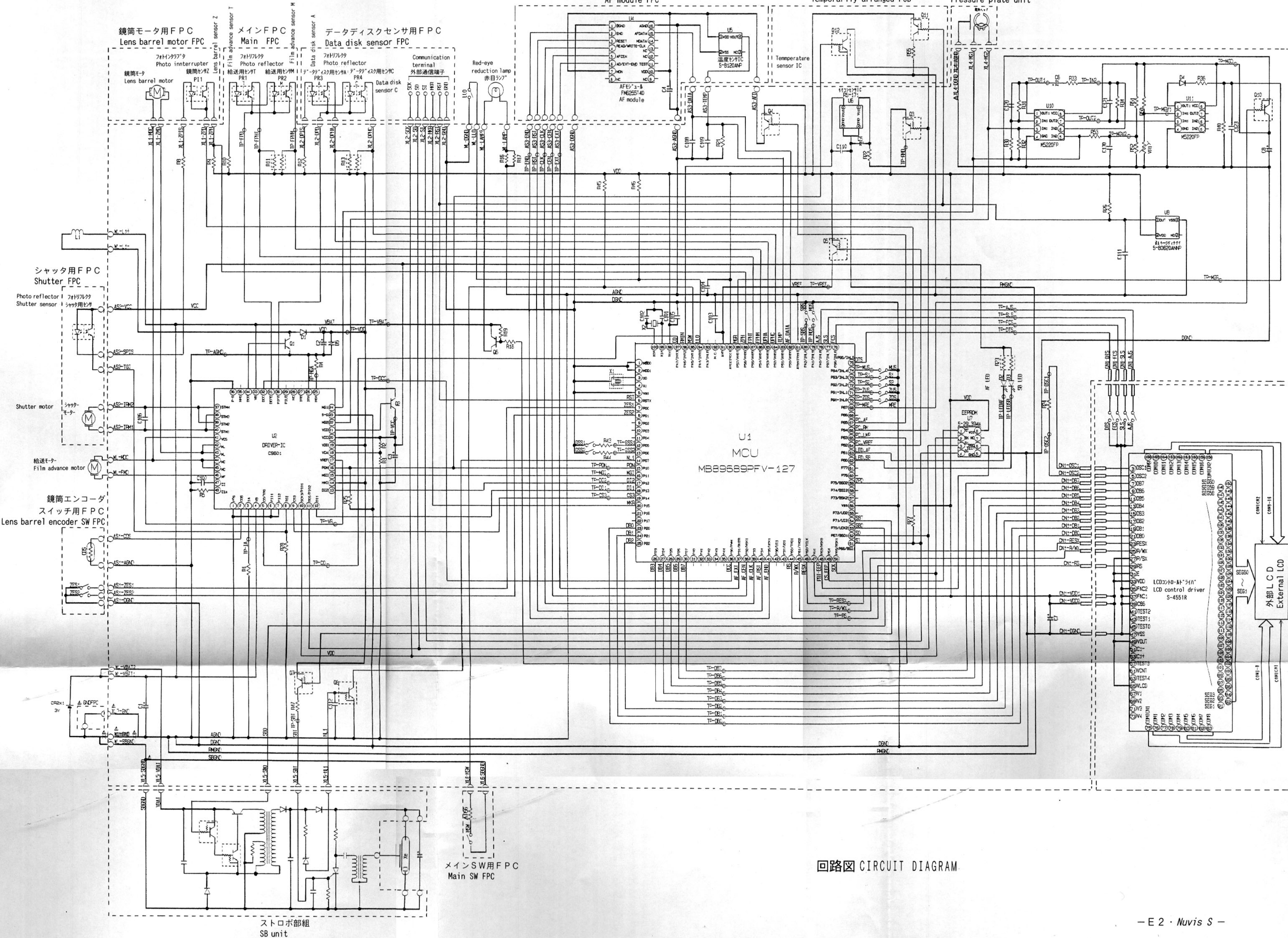
Wiring Diagram	E 1
Circuit Diagram	E 2
Checklands Diagram	E 3
Pattern Diagram	E 4
Parts locations Diagram	E 5
EEPROM DATA	E 6

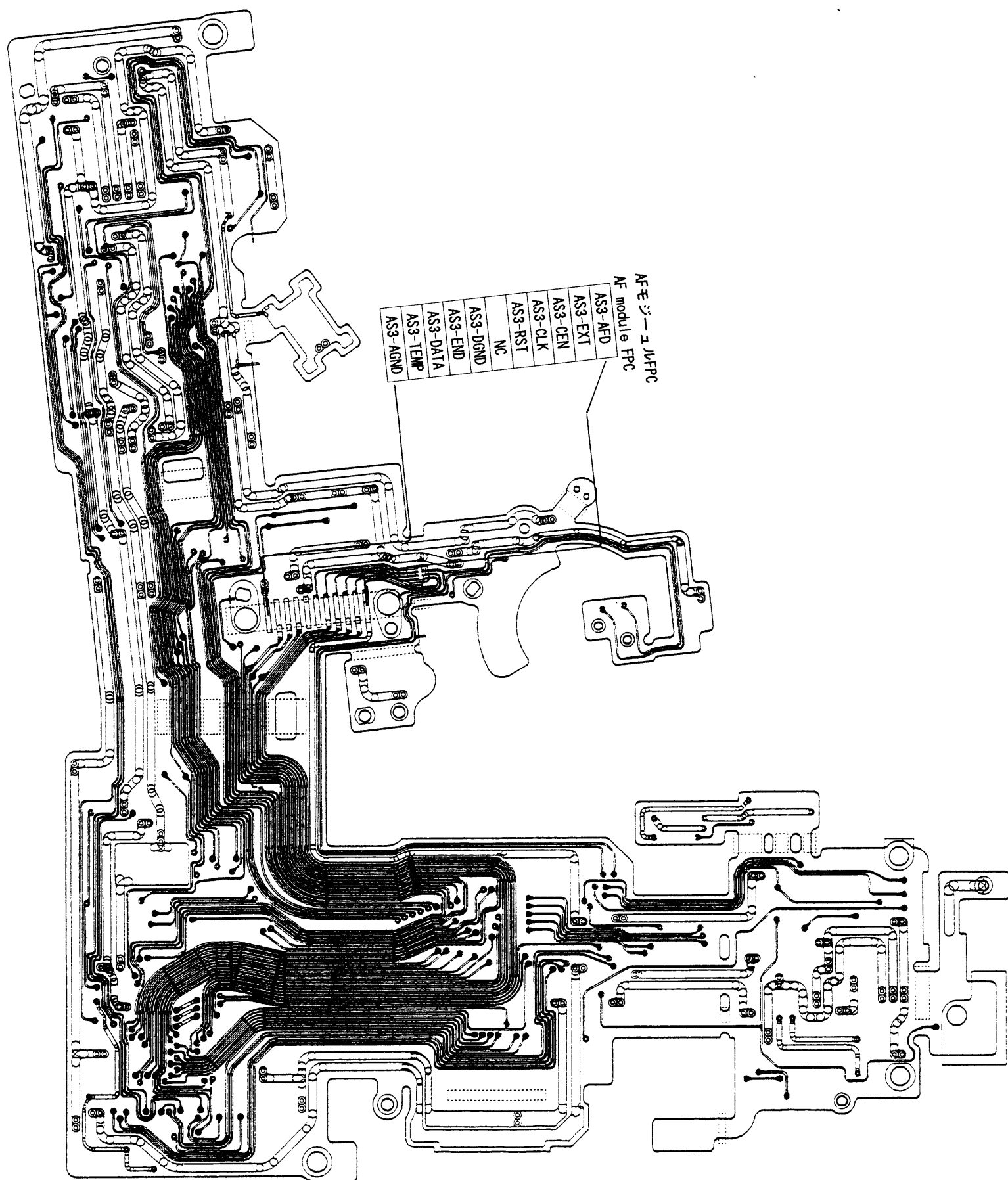


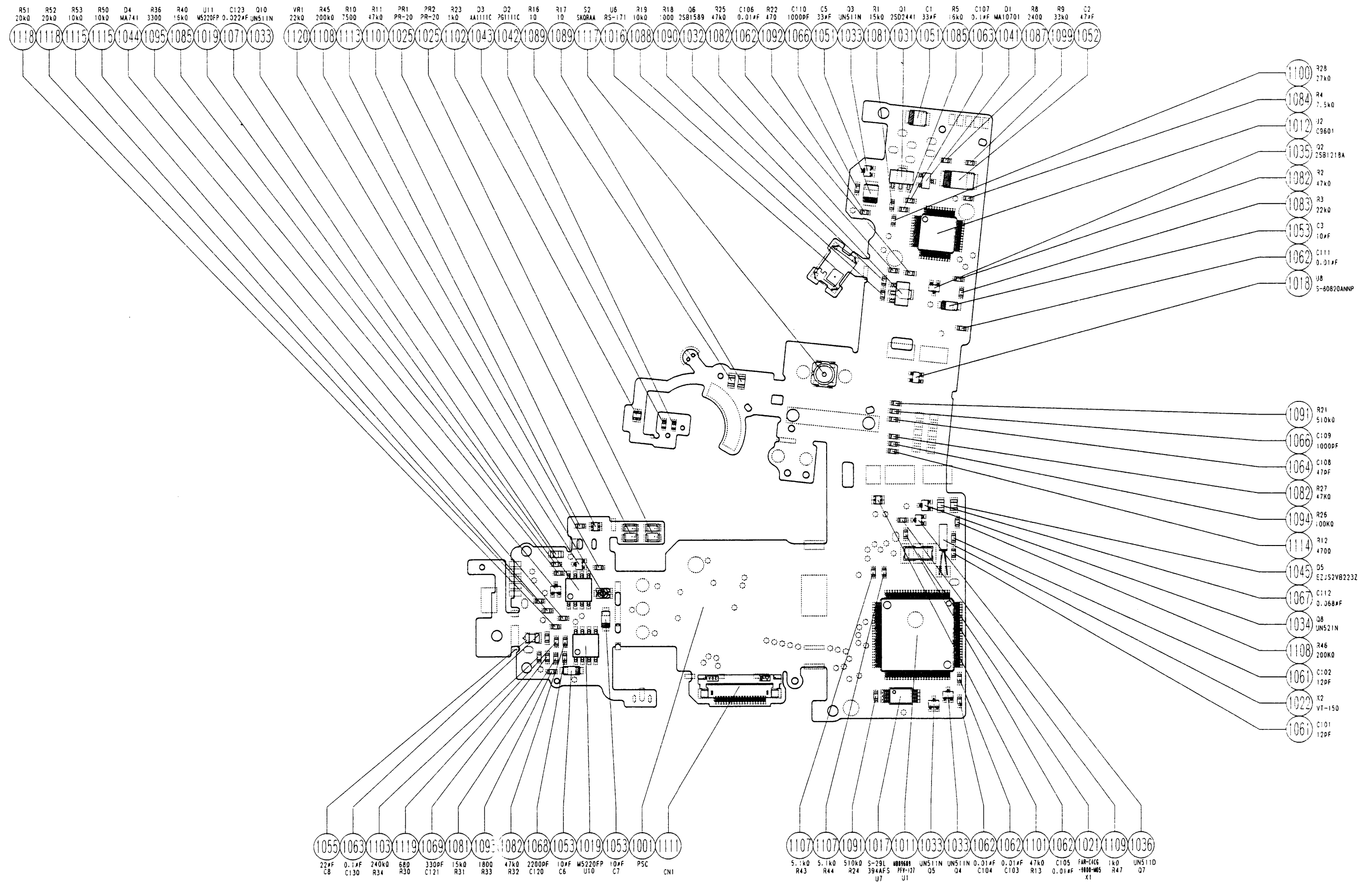
A Fモジュール FPC
AF module FPC

暫定 PCB
Temporarily arranged PCB

圧板部組
Pressure plate unit







EEPROM DATA

Nikon Nuvis S

Oct. 19, 1998

Address	Data
0 34	カメラ制御値 CAMERA CONTROL DATA
35 40	バックフォーカス調整値 BACK FOCUS ADJUSTMENT DATA
41 97	カメラ制御値 CAMERA CONTROL DATA
98 138	A F 調整値 AF ADJUSTMENT DATA
139 148	カメラ制御値 CAMERA CONTROL DATA
149	(B C 調整値) サービスでは調整せず BC ADJUSTMENT DATA (DO NOT CHANGE)
150	シャッターメカレディ調整値 SHUTTER MECH DELAY ADJUSTMENT DATA
151	カメラ制御値 CAMERA CONTROL DATA
152 162	A E 調整値 AF ADJUSTMENT DATA
163 255	カメラ制御値 CAMERA CONTROL DATA

INSPECTION STANDARD AND TOOLS

[1] Inspection standard	R 1
[2] Tools	T 1

CONDITION FOR INSPECTION

Normal temperature : $25 \pm 5^{\circ}\text{C}$ (Relative humidity : $65 \pm 20\%$)

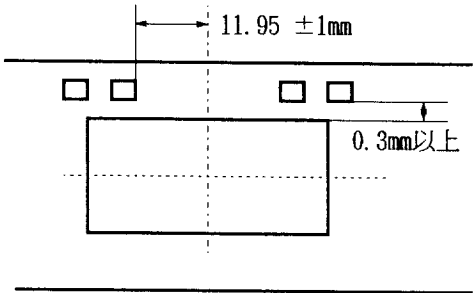
Power source : $3.0 \pm 0.03\text{V}$ 2 A or more at $0.5\ \Omega$ load

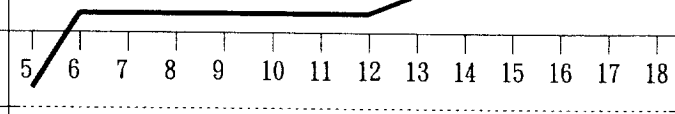
Light source : Surface light source 2856°K

K coefficient : 1.3

[1] INSPECTION STANDARDS

FFA09201-R. 3458. A

	ITEM	APPLICABLE STANDARD	APPLIED TOOLS
For PHOTO-GRAPHY	Dimensions of picture frame	Vertical: $16.7 \begin{smallmatrix} +0.75 \\ -0 \end{smallmatrix} \text{mm}$ Horizontal: $30.2 \begin{smallmatrix} +1.22 \\ -0 \end{smallmatrix} \text{mm}$	Slide calipers Scale Film
	Frame position		
	Light leakage	For the exposure test, the formula of "40,000 lux. X minute(s) taken for exposure" should be applied. (ex. 40,000 lux. X10 min. =400,000 lux. per min.) According to any minute(s) drawn, the slide cover should be open and light should apply onto the camera from every direction. Then, the applied light should not leak into the camera.	Light-leak tester
		The formula of 'More than 80,000 lux X time taken X 6 surfaces' should apply. The operation order set on the camera shall be : ① Resetting thr lens barrel as the slide cover is closed. ② Setting the lens barrel shift to the Wide-end position ③ Setting the lens barrel shift to the Tele-end position ④ Repeating the operation mode ① to ③ 5 times both ways	Sunshine
For FM ACCURACY	Exposure limit for FM	Time taken for exposure should be counted after flashing in the darkness. Referable values; *At auto operation =1/60 sec. within ± 2 TV *At slow synch. operation =1/8 sec. within ± 2 TV	
For AF ACCURACY		Refer to the AF step location and the switching position described in the specifications.	

	ITEM	APPLICABLE STANDARD			APPLIED TOOLS
For AE ACCURACY	EV	The figure of EV reference line 			EF-511N Adapter for the advanced photo system EF8000 DC regulated power supply
	+0.2 +1.0 0 -1.0				
	AE accuracy with Manual Light	The AE accuracy should meet the criteria below when setting ISO.			
	The AE accuracy should meet the standard in the table below.				
Tolerance Dispersion Neighboring difference	EV	Tolerance	Dispersion	Neighboring difference	• Get the camera close to the luminance side on the AE tester. Then, measure each brightness through the aperture surface. Ex. Comparing the LV5 to the LV7, 5's average value drawn from the 5-time EV measurement shall not exceed 7' average value.
	T: 5 < EV ≤ 11	±0.9EV	Within 2.0 EV	Each EV should be aligned in good order.	
	W: 5 < EV ≤ 11	±0.9EV			
	T: 11 < EV ≤ 15	±1.2EV			
	W: 11 < EV ≤ 15	±1.2EV			
	T: 15 < EV ≤ 17	±1.6EV			
W: 15 < EV ≤ 17	±1.6EV				
	T: 16.125 < EV ≤ 18.125		Shutter curtain should be open.		
Note: *Tolerance: This means the tolerance in the average lumin exposure value drawn from any values continuously measured 5-times *Dispersion: This means the difference(s) between the maximum and the minimum values drawn from the continuous 5-time measurement. *Neighboring difference: This means the difference between the LV 'A', which is mbasic numerical value, and the LV 'B', which is 2-EV larger than the LV 'A'. The neighboring difference can be drawn from the procedures below. Based upon these two LVs, their EVs are particularly measured continously 5 times, and then each average value is finally caluculated and drawn. The neighboring difference is a comparable numerical value between the two average EVs. *The AE standard value(s) shall be in accordance with the EV reference line.					
	Shutter operation in high luminance	Shutter curtain should be open at BV10 based upon ISO 400 film speed			
For LENS BARREL	Switch timing and applied current	Position	Operating period	Current value	Oscilloscope Digital multimeter
		Re ⇔ W	Within 2.0 sec	Less than 600mA	
		W ⇔⇔ T	Within 3.5 sec		
		T ⇔ Re	Within 4 sec		

	ITEM	APPLICABLE STANDARD		APPLIED TOOLS					
For BACK FOCUS	Back focus	The AF step position of the camera should be set up to "1" (∞). Then, the object lens of the collimator J19019 should be set up to "-7.5". For on-the-film criteria, the following values should be applicable. WIDE -0.05±0.10mm TELE -0.1 ±0.15mm		Collimeter (J19019) Adjustment focus stand (J15327)					
For OPERATION	Pressure	Item	Compression		Tension gauge				
		Slide cover	'fully closes' to 'opens' 1000 ±300g						
			'opens' to 'fully opens' 800 ±200g						
			'fully opens' to 'closes' 1000±300g						
			'closes' to 'fully opens' 800 ±200g						
		PAR	350 ± 50gf						
		S1	100 ± 50gf						
		S2	400 ± 100gf						
		SBS button	100 ± 40gf						
		MOS button	100 ± 40gf						
		FCS button	100 ± 40gf						
		DSC button	100 ± 40gf						
		MUS button	100 ± 40gf						
		SLS button	50 ± 40gf						
		AJS button	100 ± 40gf						
		Zoom SW ON	50 ± 50gf						
		Cartridge cover knob	opens 1000 ± 400gf						
		Cartridge cover	closes, the presence of cartridge cover 1300± 500gf						
For FLASH	Guide Number (ISO 200 • m)	The flash should be charged by the fresh battery for 18 sec. for flash use within 1 sec. in order to meet 11.3±0.4 EV. In uncharged condition, consecutive release should be made twice per sec. Then, the lowest value in 3 times of flash should meet "more than 8.2 EV".			Fresh battery Flash meter Tape measure Standard reflector paper				
	Recycling time	After charging the flash by with the fresh battery, in the fourth flash operation from the beginning, time period should be in 6 sec.			Stopwatch				
	Light distribution characteristics * Set up as wide position *Centering the optical axis within a realm of 2m		Toward the center of speed light, each guide No. shall be measured in accordance with each angle below in order to compare one of each with the guide No. at center.						
		Top	Bottom	Left	Right	Up Left	Down Left	Up Right	Down Right
Half-degree from the luminous intensity distribution angle		22°	23 °	35°	36°	38°	38°	39 °	40 °
Accuracy less than EV		-1	-1.5	-1		-1.6		-2	-1.6
Any conspicuous unbalanced light distribution is unacceptable.									

	ITEM		APPLICABLE STANDARD			APPLIED TOOLS
For FLASH	Color temperature		6,400 ⁺⁴⁰⁰ ₋₃₀₀ ° K			Color temperature meter
For VIEW-FINDER	Diopter		The long distance view through the both Wide and Tele positions - For positive diopter position : More than +1 - For negative diopter position : Less than -1			Diopter telescope
For VIEW-FINDER	Viewfinder coverage		H:75% to less than 100% C:75% to less than 100% P:70% to less than 100% It should be measured from 3m distance.			
	Magnification		Wide 0.343 ± 0.1 times Tele 0.858 ± 0.1 times			
For MOTOR DRIVE			Operating time	Operating curent		DC regulated power supply
		Film advance	Within 2.0 sec	Within 600mA		
		Film rewind	Within 55 sec			
		※Film advance time at 40th frame				
	Frame counter indicator	• Count down by one frame every time film is advanced. • When the frame counter reaches 1, E blinks after the motor stops.				Film Stopwatch
For LAMP INDICATORS	Self-timer		• 10±3 sec. • Blinks for 8 sec., lights up for 2 sec.			Stopwatch
	Remote control		• Camera front side: More than 5m distance Vertical direction: More than 3.5m at receiving angle of ±9 ° , more than 3.5m distance. Horizontal direction: More than 3.5m at receiving angle of ±15° , more than 3.5m distance. • Shutter should release after the indicator lamp lights up when receiving signal from the transmitter. • 2 sec. ±1 sec.			Remote control unit Tape measure
For ELECTRICAL CHARACTERISTICS	BC voltage	Level 1	2.40±0.1V	Low battery indicator blinks		
		Level 2	2.26±0.1V	LCD goes out, shutter is locked.		
	Current consumption		Standby: • Less than 15μA after 90 sec. from the power switch is off. In operation: • Less than 550mA when the SBS, MOS buttons are pressed after 20 sec. from the power switch is ON. Charging: • Less than 4A • Within 20 ±1 sec.			DC regulated power supply (over 5A) Ammeter Stopwatch

[2] TOOLS

1. Major general tools and testers

☆ : New tool

Tool No.	Name	Specifications
	DC regulated power supply	0 ~18V, 2A (Model 526) 0 ~18V, 5A (Model MTR)
	Digital multimeter	Model 3200 Model CD-780C
☆ J15356-1	AF ADJUSTMENT CHART	For 3.021m
☆ J15356-2	AF ADJUSTMENT CHART	For 2.021m
☆ J15356-3	AF ADJUSTMENT CHART	For 1.021m
☆ J15356-4	AF ADJUSTMENT CHART	For 0.641m
☆ J15356-5	AF ADJUSTMENT CHART	For 0.471m
J19019	Collimator	24LT-2DTS f=193.5mm
J19036 J19042	Multi shutter tester	EF-8000
J15327	FFD micro adjustment stand for the advanced photo system	
☆ J15348	Connection tool	
☆ J18295A	Nuvis S inspection and adjustment program	NEC 5 inch
☆ J18295B	Nuvis S inspection and adjustment program	NEC 3.5 inch
☆ J18295C	Nuvis S inspection and adjustment program	IBM 5 inch
☆ J18295D	Nuvis S inspection and adjustment program	IBM 3.5 inch
J19042D	Exposure value measuring adapter	For EF511N, EF8000
☆ J15354	Parallax board	
J18281	Focus glass for parallax adjustment	

2. Hand made tools

	Name	usage
Hand made tool 1	Lightlock door opener for advanced photo system film cartridge.	To repeat use of film cartridge once used.